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# PETROLEUM WEEK

A McGRAW-HILL PUBLICATION

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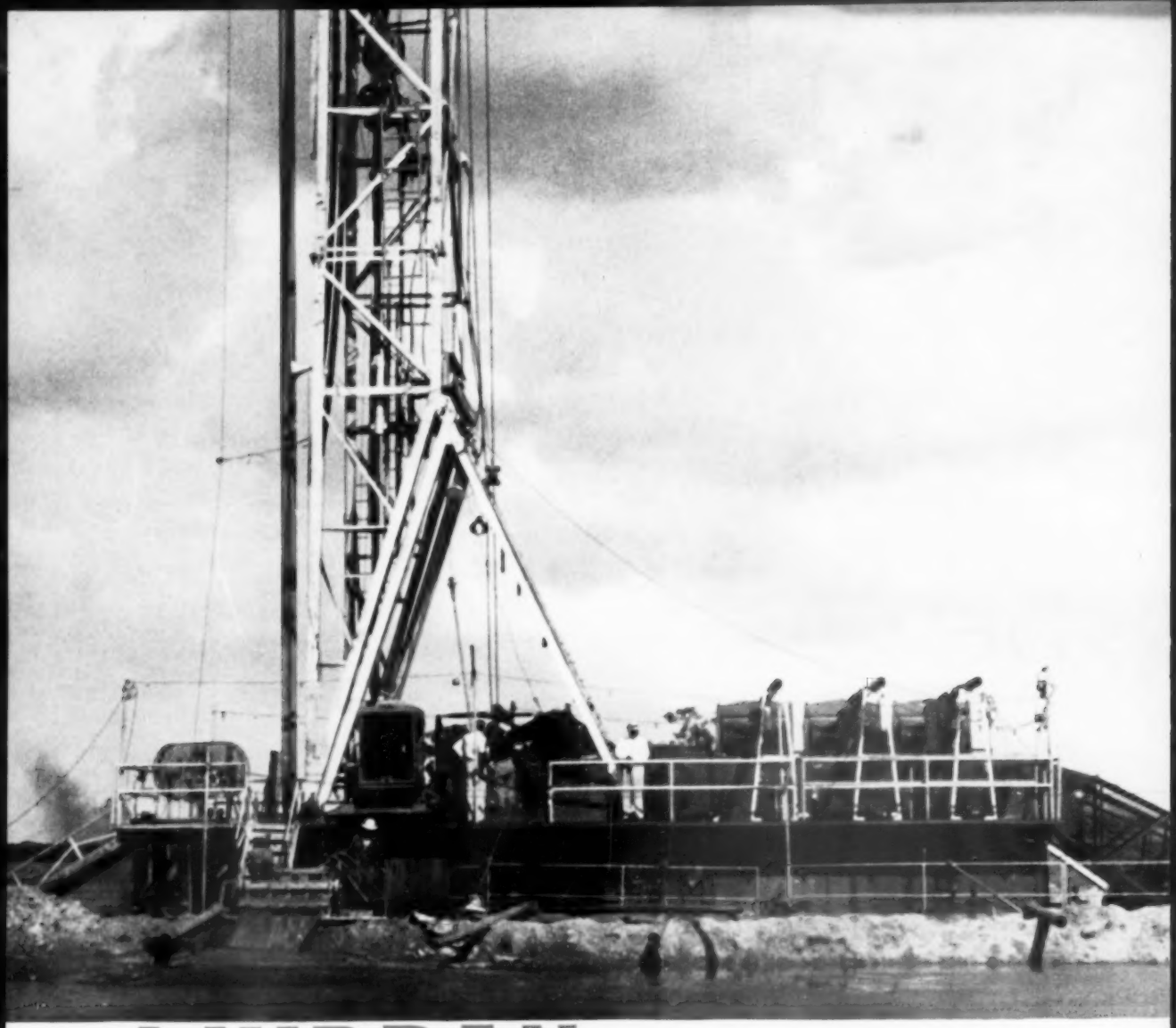

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The use of Mudban*, Dowell's new low-cost mud-dispersing agent, is proving to be—time after time—a fast, efficient method for loosening stuck drill pipe.

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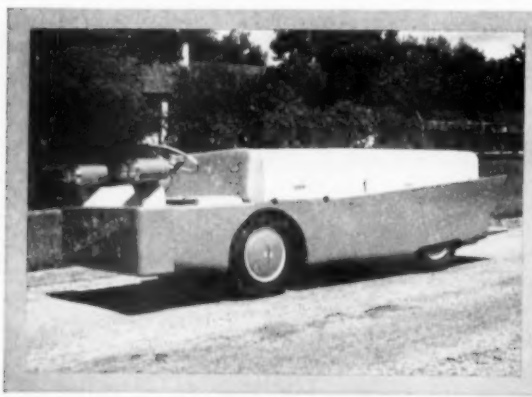

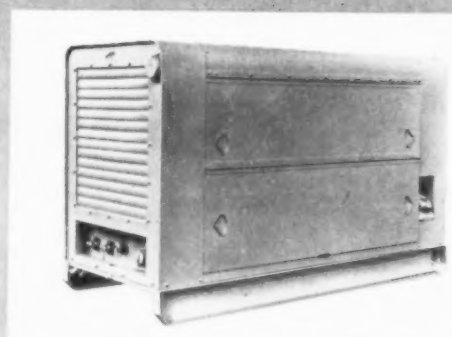

# PETROLEUM WEEK

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## INSIDE *Slant*

NO GAS TAX HIKE NEEDED

If all federal automotive taxes were allocated to road-building programs, there would be no need for an increase in the gasoline tax.

This is the conclusion of a study made by the National Petroleum Assn., and mailed to each member of the 86th Congress.

The study shows the federal government allocates some of its taxes, such as those on gasoline, tires, tubes, and trucks and buses, to the Highway Trust Fund. This fund was established by Congress in 1956 to pay for an Interstate Highway System.

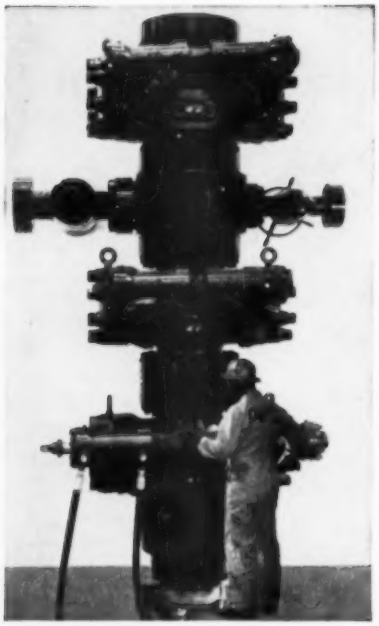
The study also shows that the government does not allocate some automotive taxes, such as those on autos, parts, and accessories, to the Highway Fund.

Those funds not allocated to highways total $1.3-billion a year.

They have been diverted to the General Fund, where they may be used for the protection of oyster beds, or for any other of the many programs of the federal government, but not for road-building.

There will be a deficit of $700-million in the allocated funds during the current fiscal year. But if the $1.3-billion of diverted receipts were included, there would be a surplus instead.

LeRoy Menzing
EDITOR



**PRESSURE IS A PARADOX**

In oil and gas wells high pressure usually indicates high profits. Unfortunately, it also means greater danger. As wells go deeper for more oil, pressures encountered are constantly rising. Equipment design must, of course, anticipate the greater stresses and hazards of deeper drilling. Control has been our specialty since pressure became a problem. Cameron pressure control equipment has been ready when drilling trends made new and tougher demands. Our latest contribution is the Type "F" Blowout Preventer, which is made in all sizes and will control pressures up to 15,000 psi (22,500 psi test pressure). This is the highest working pressure so far and roughly 10 times greater than that of the first successful preventer (a Cameron design) which appeared in 1922. This was the date when drillers started to COUNT ON CAMERON for control of pressures and profits.

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DEPT/Opinions

# Views That Make News . . .

"To our mind there must be a great inventory buildup under way in the oil industry. It's terribly difficult to keep up with demand. After the automobile and appliance industries increased their demand for steel, it wasn't long before a terrific increase in demand for oil country goods started."

—FREDERICK M. MAYER
*President*
*Continental-Emsco Co.*

"Even before the economic recession of 1957, the [Humble] company management knew that it faced an impending surplus of personnel . . .

"We took steps to reduce the personnel surplus, but only on the basis of a plan under which every possible consideration was given to the employees concerned . . .

"This reduction in personnel . . . was absolutely necessary . . . to meet competition and preserve economic health."

—C. E. REISTLE, JR.
*Executive vice-president*
*Humble Oil & Refining Co.*

# . . . and Letters

Dear Sir:

Your "Inside Slant" [PW—Mar.6 '59,p3] makes a point that is important to the ever-increasing number of oil men interested in overseas operations—and it is very well put. I predict it will be read with interest in many quarters.

Also, I would like to tell you that your foreign coverage . . . is doing a fine job for the industry.

G. M. CUNNINGHAM
*President*
*American Overseas Petroleum, Ltd.*

Dear Sir:

The picture "Oil Man's Album" [PW—Feb.27'59,p7] does not show a "band wheel"; it shows the two eccentrics of what appears to be a double-eccentric geared pumping power. A band wheel does not "rotate back and forth." The eccentrics rotate within rims which slide upon the eccentrics. The rotation of the eccentrics within the rims causes them to have a type of motion resulting in a "back and forth" motion of the shackle rods attached to them.

The shackle rods usually were not supported upon pulleys, but were merely supported upon rods having hooked ends, which in turn were supported by posts. An examination of the picture indicates that this was the case here.

ROBERT B. BOSSLER
*Professor*
*Petroleum Engineering*
*Agricultural & Mechanical College of Texas*

Dear Sir:

May we . . . compliment you on your Special Report entitled "In Exploration, the Problems Are Tougher, Incentives Are Weaker" [PW—Mar. 13'59,p42].

Individual exploration tools have been developed to a high degree. . . . However, the future of petroleum exploration lies in the brains of seasoned exploration managers who have the vision and perspective to draw upon the regional fabric of structure, tectonics, and stratigraphy to evaluate the immediate local prospect under study. . . . And the files of geologic literature are filled with ample basic material to provide the necessary correlation for most areas.

JOSEPH A. KORNFELD
*Oil & natural gas consultant*
*Tulsa, Okla.*

Dear Sir:

I have reviewed your article "Pipeliners Dig Up Prehistoric Past" [PW—Feb.6'59,p46] with high interest and satisfaction. Rarely has related information, which I have given orally, been so factually reported. You did it commendably. My congratulations. . . .

I would be most grateful . . . for ten copies of this issue . . . for distribution to the Secretary of the Interior, Smithsonian Institution, and other important officials and agencies.

JESSE L. NUSBAUM
*U.S. Dept. of the Interior*
*National Park Service*
*Santa Fe, N.M.*

Dear Sir:

I want . . . to congratulate you on the excellent manner in which you handled the article on legislation in the various states [PW—Feb.27'59, p7].

STEPHEN P. POTTER
*Committee on Public Affairs*
*American Petroleum Institute*

PETROLEUM WEEK *will publish reader comments each week. Address letters to LeRoy Menzing, Editor,* PETROLEUM WEEK, *330 W. 42nd St., New York 36, N. Y.*

*now, more than ever...*

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Consolidation of the Denver National and U. S. National Banks was an important event to the Oil Industry of the Rocky Mountain West.

The pooling of resources and combining of technical knowledge means greater loan capacity... greater individual and corporate service than ever before.

Yes, now more than ever, the Denver U. S. National is *the* oil bank of Denver—at your service throughout the Rocky Mountain Region.

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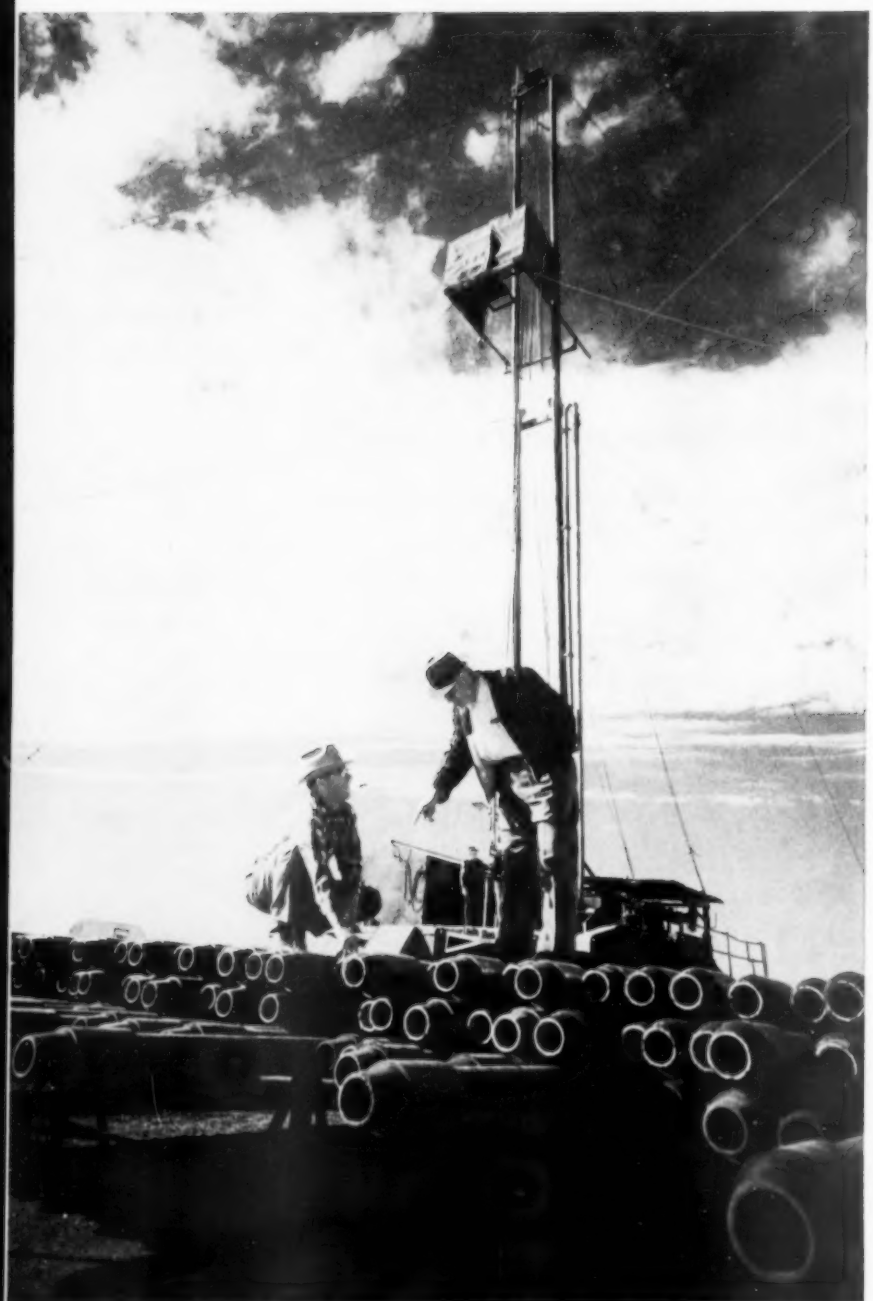
# 3 Store Managers Work Triple Play To Help Return Rig To Operation

## Hurry-Up Call For Casing Demonstrates How Pittsburgh Steel Company's Independent Distributors Go All-Out To Help Drilling Crews



**Casing has been run,** drill pipe is back on rack and A-mast rig stands stark against Texas sky while concrete sets.

Three oil country store managers for a Pittsburgh Steel Company independent distributor teamed up to put a North Texas oil well rig back in operation after the coldest weather in 20 years forced a shutdown.

**With water lines frozen and the sludge-pit covered with ice during the cold weather, the drilling contractor was forced to suspend operations. When he was notified of a coming break in the weather, he moved fast to avoid any more lost drilling time.**

At 5 a.m., his tool pusher called the independent distributor's store in Wichita Falls, Texas, and asked Store Manager Pete Kovack for 3,500 feet of 5½-inch Pittsburgh Steel Co. casing. Kovack promised action. Kovack called his home office in Fort Worth. Headquarters immediately made a telephone survey of casing stocks at stores in Olney and Graham, Texas, the two closest stores to the rig located in the Young County Regular Pool.

• **Adequate Stocks on Hand**— The telephone check disclosed that Graham, the closest store, had adequate stocks. So Graham Store Manager Leon Mangum roused warehousemen and truck drivers who loaded two trucks with the 3,500 feet of casing. The casing was on the racks at the rig by 8 a.m. long before it was needed by the tool pusher. Work continued without any new delays. Tool Pusher Jesse Johnson, whose company has used more than 70 strings of casing bought from this distributor, said the casing was run in six hours without trouble of any kind.

The driller ran Pittsburgh Steel's J-55 API standard casing with confidence. The distributor had helped work out the most economical string with the lightest weights and lowest grades capable of handling expected stresses—increased by plans to fracture the well with a 2,500 psi pressure.

Store Manager Joseph Reed came over from Olney, 18 miles away, to be on hand when the casing arrived. Later, Mangum stopped by from Graham, 14 miles away, and Pete Kovack visited the rig before the day was over. He made sure the sequence of events he started had been carried

**At Olney, Texas,** Store Manager Joseph Reed (in checked shirt) loads a pick-up truck to make a daily service call on rig located in the Young County Regular Pool.

**On the drilling floor** of rig, Tool Pusher Jesse Johnson, left, and Store Manager Pete Kovack of Wichita Falls, Texas, inspect cementing head used to seal hole and Pittsburgh Steel casing.

out successfully. Reed continued to serve the rig's daily needs from Olney until the well was completed.

**That incident involving three store managers is typical of the service rendered by this independent distributor. He's been giving that kind of service day-in and day-out for 40 years.**

For 30 years, Pittsburgh Steel Co. has supplied this distributor with oil country goods. During those three decades, oil men who bought drill pipe, casing and tubing from this independent distributor used it with confidence that they were getting the best products, backed up by tops in service.

Mr. Independent supplied the service but the quality of the tubular products came from Pittsburgh Steel Co.'s tube mills.

Starting with the proper chemical analysis, Pittsburgh Steel's blast furnaces and open hearths produce steel tailor-made for the oil country.

**Steel for these tubular products has to be good right from the start. Only the best steel can undergo the severe forging operation required to pierce solid tube rounds and convert them into seamless tubes. Only steel with perfect surface and internal soundness can be used.**

The hydrostatic test given every single joint made is a final guarantee to oil men that tubular goods made by Pittsburgh Steel Co. will do the job in the field.

That's how steel men and independent distributors make a team that oil men are glad to have back them up when they're working against time to complete a well.

**You can't do better than the best. And the best is good steel backed by a distributor who has your interest at heart. That's Mr. Independent who owes his allegiance to only one man—the customer who wants oil country goods when he needs them, where he needs them.**

Each of the distributors listed here has that goal. You'll like the way Mr. Independent carries out his job for you. Order your next string from the independent distributor nearest you.

**Store Manager Leon Mangum** inspects casing in yard of Graham, Texas, outlet for a Pittsburgh Steel independent distributor.

**Distributor Home Offices**

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**Franklin Supply Company**
Denver 10, Colorado

**Houston Oil Field Material Co.**
Houston, Texas

**Industrial Supply Company**
Wichita Falls, Texas

**Iverson Supply Company**
Tulsa, Oklahoma

**Longhorn Supply Co., Inc.**
Houston 14, Texas

**Lucey Export Corporation**
New York 7, New York

**Lucey Products Corporation**
Tulsa 19, Oklahoma

**McJunkin Corporation**
Charleston 22, West Virginia

**Midland Supply Company**
Wichita 7, Kansas

**Mountain Iron & Supply Co.**
Wichita 2, Kansas

**The Producers Supply & Tool Co.**
Fort Worth 2, Texas

**Production & Refining Equipment Company**
Odessa, Texas

**Sandy Supply Company**
Wooster, Ohio

**Southwest Supply Company**
Pittsburgh, Pennsylvania

**Superior Iron Works & Supply Co.**
Shreveport, Louisiana

**Tex-Tube, Inc.**
Houston 7, Texas

**Western Supply Company**
Tulsa 1, Oklahoma

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# 60-Second Summary / WHAT'S HAPPENING IN OIL

AT-A-GLANCE PETROLEUM WEEK

March 27, 1959

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**Will Jimmy Hoffa make any real inroads into oil unions?** That question is creating a stir in oil management and labor circles as Hoffa's Teamsters push a campaign which, right now, is aimed primarily at Esso's independent unions. . . . p. 14

•

**Chances are the industry won't practice what it preaches on holding stocks down.** Company officials said last week that lower product stocks are desired, but refiners, viewing import quotas, probably will maintain high runs. . . . p. 12

•

**Lion Oil has an unusually thorough modernization program under way at its El Dorado (Ark.) plant.** It is adding four new units and improving existing operations. . . . p. 40

•

**Sun Oil has developed a new drillstem tool for electric logging.** It can log with a drill string in the hole, thereby reducing costs and improving evaluations. It has been successfully field tested. . . . p. 21

•

**The battle on corrosion is gaining on two fronts.** Cathodic protection is improving on coated pipelines, and new coatings are succeeding on tanker walls. . . . p. 34

•

**Esso Standard is recruiting all its New York headquarters personnel as salesmen.** It's offer of cash awards for new business has brought in 500 "hot tips" so far. . . . p. 50

•

**Humble Oil & Refining is cutting refinery losses with new devices.** Visual leak detectors for safety valves and improved oil-water separators have helped cut losses from 5% of throughput down to 0.7%. It hopes to cut losses to 0.5%. . . . p. 36

•

**Drilling in the northeast Texas Panhandle surges ahead** with high success ratios and multipay possibilities spurring activity of some 20 independents and majors. . . . p. 24

•

**Wildcatting is stepping up in Turkey in the wake of recent oil shows.** Seven foreign companies—including six U. S. firms—are doing exploratory drilling. . . . p. 42

•

**Exchanges of import allocations for domestic oil which involve cash considerations won't be approved.** But Interior officials say oil-for-oil trades are O. K. if ratios are not "unreasonable." . . . p. 16

•

**Formation fracturing is aiding waterflood projects.** It increases injection rates and lowers pressures of input holes. . . . p. 27

# Up to the Minute / SIGNIFICANT LATE NEWS

AT-A-GLANCE PETROLEUM WEEK Copyright

March 27, 1959

**Higher octane ratings at lower cost may be in the offing.** The Texas Co. this week revealed development of a petrochemical (tertiary butyl acetate) to be used with tetraethyl lead to make TEL more efficient, especially at higher octane levels.

The product, named the Texaco Lead Appreciator (TLA), is said to boost 100-octane ratings to 101, and to hike 106-octane to 108 or 108.5. And its use would be cheaper than the addition of processing equipment.

Texaco is making TLA available to anyone through a license procedure. It has not yet decided whether to manufacture the product itself.

•

**The Russians are now definitely slated to do offshore exploration in Iraq**—possibly under a 90-10 profit-sharing deal (PW—Mar.13'59,p82). As soon as the pact is ratified, the Russians will start seismic work in the Persian Gulf, where rights were surrendered last year by an Iraq Petroleum Co. affiliate. An inland area is also involved—the Khanaqin concession, on the Iranian border, given up last year by British Petroleum Co.

•

**Western Canadian crude is becoming more competitive price-wise with foreign crude at eastern refineries.** Interprovincial Pipe Line Co. this week cut its rates from Edmonton to Sarnia by 8¢ a bbl., to 56¢ a bbl. And the additional charge from Sarnia to Toronto was cut from 8¢ to 4¢ a bbl. Also, Imperial Oil cut light Canadian crude postings 14¢ to 17¢ a bbl. (page 22).

•

**Saudi Arabian brokers may enter international oil marketing.** Reportedly, they are pushing the sale of 500,000 tons of Arabian crude to Egypt, a move said to have the highest support of the government. Export sales from Saudi Arabia previously have been handled by international oil companies.

•

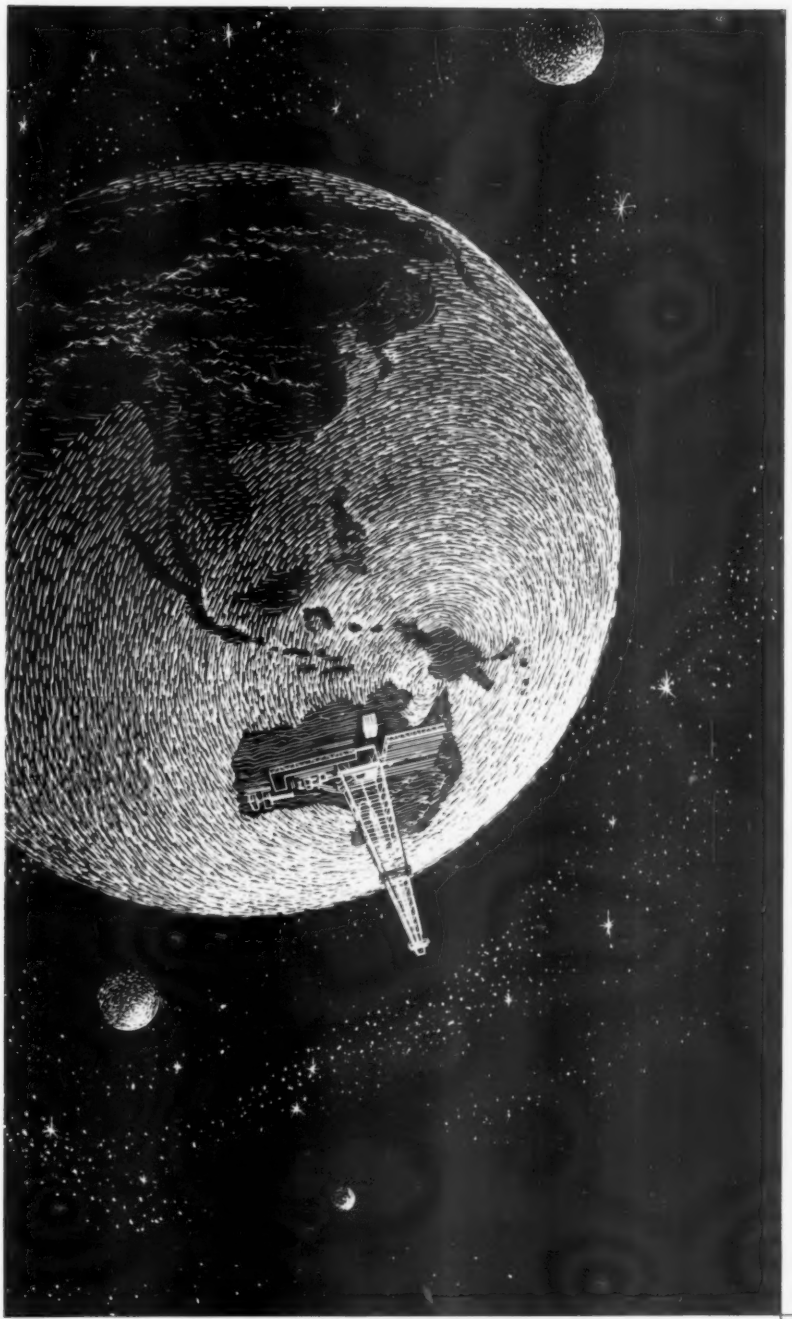
**The Federal Power Commission has been rebuffed in an attempt to keep oil jobbers out of a natural gas hearing.** A U. S. court of appeals has set aside an FPC order because the agency refused to permit a jobbers' association to take part in hearings on the case.

•

**Initial clearances were given this week for the movement of 565-million cu. ft. daily of Western Canadian gas to the U. S. West Coast.** Alberta's Oil & Gas Conservation Board recommended export permits for Alberta & Southern (400-million cf/d) and Westcoast Transmission (165-million cf/d).

•

**Sen. William Proxmire wants to rescind mandatory oil import controls.** The Wisconsin Democrat introduced a bill this week that would end the curbs and give Congress final say-so—after a 60-day study period—over future proposals by the Administration.



# *Logging... Down Under*

Alaska, Central and South America, . . . now *Australia* — another pin in Core Lab's map of overseas well logging and core analysis operations.

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# Industry Prefers Lower Stocks

### But High Refinery Runs Keep Inventories Up (Millions of barrels)

| Estimates of "ample" stocks by | Gasoline Apr. 1 | Gasoline Nov. 1 | Kerosine Apr. 1 | Kerosine Nov. 1 | Distillate Apr. 1 | Distillate Nov. 1 | Residual Apr. 1 | Residual Nov. 1 |
|---|---|---|---|---|---|---|---|---|
| 23 companies average out to | 188.7 | 154.0 | 17.2 | 34.0 | 65.2 | 156.8 | 37.2 | 48.9 |
| A year ago, the estimates averaged | 185.9 | 152.5 | 18.3 | 34.2 | 65.1 | 155.5 | 36.1 | 48.4 |
| But actual mid-March stocks totaled | 210.3 | | 19.0 | | 78.9 | | 55.0 | |

### Crude Stocks Are Close to Desired Levels and Demand May Rise 4.4%

| | Total U.S. Apr. 1 | Total U.S. Nov. 1 | East of Rockies Apr. 1 | East of Rockies Nov. 1 | Texas Origin Apr. 1 | Texas Origin Nov. 1 |
|---|---|---|---|---|---|---|
| Current estimates | 253.6 | 257.8 | 220.2 | 224.5 | 107.6 | 109.8 |
| Year ago estimates | 257.6 | 261.7 | ..... | ..... | ..... | ..... |
| Mid-March stocks | 255.7 | | 215.9 | | 113.1 | |

**The oil industry, which perennially has trouble keeping its inventories down to "desired" levels, faces a greater-than-usual risk of oversupply this year.**

That is the opinion of many oil men, who predicted this week that refinery runs for the remainder of the year would be at a higher-than-necessary level.

Few, if any of them, a PETROLEUM WEEK survey shows, believe the industry will be able to hold its product inventories down to the levels considered "ample" by the companies reporting to the Texas Railroad Commission last week (tables).

**The reason is that gearing import allocations to refinery inputs will encourage higher-than-necessary runs to build "histories."**

This year probably will be more troublesome than future years as far as industry inventories are concerned. The reasons:

- **Many refiners got caught with their runs down on the initial allocations, a situation they will be out to avoid in the future.**

The import quotas for the period through June 30 were based on 1958 runs. And over-all runs last year were 4% under 1957.

- **Some refiners already suspect that the graduated percentages of runs for allocating imports may be changed to a flat ratio later, a move that would tend to favor higher runs in order to get the maximum quota.**

As they now stand, the allocations favor small refiners.

But there are indications that criticism from the industry, as well as possible Justice Dept. objections, may by the end of the year result in a flat percentage of runs for allocation of import permissibles.

In any event, future allocations are to be based on the run history for a 12-month period ending three months before the effective date of the new allocation.

So the tendency will be, observers predict, to maintain as high a rate of runs as is economically possible.

**Another factor that may contribute to maintaining high runs—at least in the near future—is the relatively "good" position of current inventories.**

To many economists, the current product stock positions are good, in that they are relatively lower in relation to demand than inventories usually are in the early spring.

The usual comparison is between current and year-earlier stock levels. Inventories are considered in a relatively good position if they are no greater than they were 12 months previously.

Gasoline stocks are 6-million bbl. under mid-March of 1958; in terms of days' supply, they are off 7.3%.

Inventories of distillates (including kerosine) are only 2-million bbl. under a year ago. But measured on a days' supply basis, allowing for a higher demand this year, they are off 9%. And residual fuel oil stocks, which are about equal to a year ago in volume, are down 11% on a days' supply basis.

**Nevertheless, current stock balances are more than ample in the opinion of most companies.**

The tabulations of the averages of the "ample" inventory estimates of 23 companies that reported to the Railroad Commission (above) bear that out.

Most company officials that commented on the over-all inventory requirements said that improved transportation and storage facilities, together with available producing capacity, mean that the industry does not require as large product inventories as in the past years.

**Also, higher-than-necessary runs, even over a short period during this time of year, when demand approaches its seasonal low point, can easily turn a balanced inventory position into a surplus.**

Refinery runs to date, averaging 8,150,000 b/d, up 7.7% over 1958, have been a little higher than expected.

For the April-June quarter, total demand can be expected to decline seasonally by about 1.5-million b/d from the nearly 10.8-million b/d rate now indicated for the first quarter.

Some industry economists say that if excess stocks—particularly gasoline—are to be avoided, immediate reductions in runs are needed. Estimates of the amount of the cuts required range up to 300,000 b/d.

**New supply of crude available to refiners in April will be reduced because of lower imports and slightly lower domestic production.**

Nationwide, permissible imports of crude and unfinished oil are now limited 937,000 b/d, or about 236,000 b/d under the average volume of crude and unfinished oil imported during the past four weeks.

The allowables that have been set in the major producing states indicate that domestic crude output next month will run about 7,070,000 b/d, compared with close to 7,150,000 b/d in March.

The initial April allowable in Texas will average 3,065,472 b/d, down 107,214 b/d from the mid-March level. The new permissible is based on an 11-day producing schedule in the 30-day month, compared with 12 days in the present 31-day month.

Louisiana's April allowable will be continued at 34% of the March, 1953, depth bracket formula. The permissible was set at 874,035 b/d, up 5,710 b/d to cover new production.

In New Mexico, the allowable was raised 8,849 b/d, to 347,923 b/d.

## Here's How 23 Companies View Desired Stocks, Demand Gain

### ▸ Estimated 'Ample' Crude Inventories (Millions of barrels)

| Company | in total U.S. Apr. 1 | in total U.S. Nov. 1 | in East of Rockies areas Apr. 1 | in East of Rockies areas Nov. 1 | of Texas Origin in total U.S. Apr. 1 | of Texas Origin in total U.S. Nov. 1 | Probable Rise in Domestic Demand 1959 over 1958 |
|---|---|---|---|---|---|---|---|
| Atlantic | 245-255 | 250-260 | 210-220 | 215-225 | 85 | 87 | 3.5% 4.5% |
| Cities Service | 250 | 260 | 220 | 230 | 114 | 119 | 4% |
| Continental | 255 | 257 | 222 | 224 | 94 | 95 | 4.5% |
| Eastern States | 260 | 265 | 220 | 230 | 115 | 120 | 3% 4% |
| Gulf | 240 | 240 | 210 | 210 | 105 | 105 | 4% 5% |
| Humble | 260 | 265 | 225 | 230 | 116 | 119 | 5% |
| Magnolia | 250-255 | 255-260 | 217-222 | 222-226 | 110-112 | 112-114 | 4% |
| Phillips | 250-255 | 250-255 | 215-220 | 215-220 | 110-115 | 110-115 | 5% |
| Premier | 250 | 250 | 220 | 220 | 90 | 90 | 3.5% |
| Pure | 255 | 260 | 228 | 231 | 110 | 115 | 5% |
| Shamrock | 250 | 250 | 215 | 215 | 110 | 110 | 4% |
| Shell | 250 | 255 | 220 | 225 | 110 | 112 | 5% |
| Sinclair | 250 | 255 | 215 | 220 | 112.5 | 115 | 4% 4.5% |
| Socony | 250-255 | 254-259 | 215-220 | 219-224 | 108-116 | 110-118 | 4% 5% |
| Southern Minerals | 245 | 255 | 215 | 225 | 110 | 115 | 4.5% |
| Stand. Calif. | 265 | 270 | 230 | 235 | 100 | 100 | 4.8% |
| Stand. Ind. | 255 | 255 | 220 | 220 | 115 | 115 | 4% 5% |
| Stand. N.J. | 255 | 260 | 220 | 225 | 112 | 115 | 4.5% |
| Stand. Ohio | 260 | 270 | 225 | 235 | 95 | 100 | 4% |
| Sun | 250 | 255 | 215 | 220 | 115 | 118 | 4% |
| Suntide | 255 | 255 | 220 | 220 | 115 | 115 | 5% |
| Texaco | 265 | 270 | 231 | 235 | 122-125 | 122-125 | 4% |
| Tidewater | 250-260 | 255-265 | 220-230 | 225-235 | 90-95 | 95-100 | 4% 5% |

### ▸ Estimated 'Ample' U.S. Product Stocks (Millions of barrels)

| Company | Gasoline Apr. 1 | Gasoline Nov. 1 | Kerosine Apr. 1 | Kerosine Nov. 1 | Distillate Apr. 1 | Distillate Nov. 1 | Residual Apr. 1 | Residual Nov. 1 |
|---|---|---|---|---|---|---|---|---|
| Atlantic | 200-210 | 160 | 18 | 30 | 65-70 | 150-160 | 35-40 | 45-50 |
| Cities Service | 190 | 160 | 18 | 35 | 65 | 155 | 38 | 49 |
| Continental | 185 | 155 | 16 | 32 | 65 | 160 | 35 | 45 |
| Eastern States | 190 | 135 | 22 | 45 | 75 | 130 | 40 | 60 |
| Gulf | 160 | 120 | 15 | 30 | 45 | 145 | 35 | 45 |
| Humble | 200 | 162 | 17 | 35 | 71 | 173 | 39 | 52 |
| Magnolia | 190-195 | 150-155 | 16-19 | 35-38 | 64-68 | 165-170 | 35-37 | 48-50 |
| Phillips | 180-190 | 150-160 | 16-17 | 35-36 | 65-70 | 155-165 | 36-38 | 45-50 |
| Premier | 165 | 135 | 12 | 30 | 40 | 130 | 25 | 40 |
| Pure | 190-202 | 160-168 | 17 | 31 | 71 | 157 | 37 | 48 |
| Shamrock | 185 | 145 | 16 | 30 | 60 | 150 | 25 | 45 |
| Shell | 190 | 155 | 18 | 38 | 67 | 162 | 38 | 48 |
| Sinclair | 188-192 | 154-158 | 18 | 36 | 64-68 | 156-160 | 36-38 | 48-50 |
| Socony | 190-198 | 155-165 | 17-20 | 38-41 | 63-67 | 165-175 | 37-39 | 48-50 |
| Southern Minerals | 195 | 165 | 17 | 32 | 75 | 165 | 45 | 55 |
| Stand. Calif. | 190 | 155 | 20 | 35 | 65 | 155 | 40 | 45 |
| Stand. Ind. | 200 | 165 | 15 | 30 | 65 | 165 | 40 | 50 |
| Stand. N.J. | 195 | 160 | 15 | 29 | 70 | 160 | 40 | 50 |
| Stand. Ohio | 180 | 150 | 18 | 35 | 65 | 165 | 37 | 50 |
| Sun | 185 | 155 | 17 | 32 | 65 | 150 | 40 | 50 |
| Suntide | 190 | 165 | 20 | 35 | 70 | 160 | 40 | 50 |
| Texaco | 185-190 | 155-160 | 18-19 | 36-37 | 65-66 | 150-155 | 38-40 | 50-55 |
| Tidewater | 185-195 | 150-160 | 16-18 | 32-36 | 65-70 | 155-165 | 35-40 | 45-50 |

HARRY A. LOGAN, JR., who leads industry effort to make Aug. 27 a big day.

# Party Planned For Titusville

**Invitations went out this week to the petroleum industry's 100th birthday party**—to be held at Titusville, in northwestern Pennsylvania, where the first commercial oil well was drilled in the U.S. The date: Aug. 27, the day Col. Edwin L. Drake's discovery well came in, just 100 years ago.

Released this week, on the eve of the birthday of Col. Drake himself (Easter Sunday, 1819), was a booklet telling oil companies from coast to coast what will happen at the Titusville celebration. It was issued by Oil Centennial, Inc., the industry group that is making plans for thousands of guests.

**Roundtable talks by world-famous scientists, statesmen, and businessmen will be only one highlight of the Aug. 27 birthday program.** Other attractions:

- Sealing of an oil industry time capsule, set to reopen in the year 2,000.
- Issuance of an oil centennial stamp, through the use of special equipment moved in by the U.S. Post Office.
- Unveiling of a monument at the site of the world's first oil pipeline.
- A keynote speech by one of the nation's leading figures, possibly President Eisenhower.
- Open house at the oil museum.
- An oil country barbecue.

Chairman of the oil industry division of Oil Centennial, Inc., is Harry A. Logan, Jr., president of United Refining Co., Warren, Pa.

# What Is Hoffa's Target In Oil Labor?

**Have no doubt about it: James R. (Jimmy) Hoffa is serious in his efforts to establish a strong foothold in oil refinery labor circles.**

He is making scouting trips into areas where refinery workers are being represented by independent oil unions.

He is appearing particularly solicitous in those cases where an independent union is having trouble in its contract negotiations.

He has made public speeches and public statements outlining his desire to be of help to such unions. And he has conferred privately with independent union leaders.

## I. Teamster Strategy

**It is becoming increasingly clear that the first oil target of Hoffa's International Brotherhood of Teamsters is to win over the independent unions representing workers in Esso Standard plants.**

A strong pitch is being made right now at Esso's Baton Rouge (La.) refinery, where the Independent Industrial Workers Assn. has been bogged down in contract talks with Esso management.

Some tentative moves have been made at Esso's Bayway (N. J.) refinery. And last weekend, a Hoffa aide met for two days in Washington with Esso independents from New York, Massachusetts, Pennsylvania, Maryland, New Jersey, and Louisiana.

There were 58 officers and rank-and-file independent union members at the Washington meeting. The Teamsters say the delegates represented 18,000 members in Esso plants.

There were no affiliation agreements made at this session, but the delegates agreed to go back home and talk it over with their members. Also, they sent a telegram to Baton Rouge approving that group's step toward joining hands with the Teamsters.

**An early showdown may come soon at Baton Rouge.**

This week, the independent's plant council voted to affiliate with the Teamsters, but the action must be approved by the membership—which has split into pro-Teamster and anti-Teamster factions.

The Teamsters have asked to be recognized as the bargaining agent, and the company has refused. A bargaining election likely will be held to settle the issue. Whether the Teamsters win there or not, they've created quite an uproar.

**The Oil, Chemical & Atomic Workers Union is moving into the Baton Rouge picture,** and probably will appear on the bargaining election ballot along with the Teamsters, the independent, and other groups.

Obviously, OCAW has much at stake. As the biggest of the oil unions, it does not relish the appearance of the Teamsters on the scene.

**Esso management is having little to say at this point,** but finds it hard to believe that the Baton Rouge union would tie up with the Teamsters.

**The Teamsters are running into hostility from the AFL-CIO in that area, and Gov. Earl Long said last week that "we don't need labor leaders like Hoffa in Louisiana."**

But, if the Teamsters win in Baton Rouge, there is little doubt they will push hard at other Esso independents. Eventually, of course, they would also approach other oil groups.

## II. The Teamster Lure

**To attract the little oil unions, the Teamsters use this bait: strengh, money, and a record of achievement for their members.**

Hoffa told the Baton Rouge group: "To be brutally frank, you don't have the strength to deal with Standard Oil."

Other points Hoffa seeks to make include these:

- The Teamsters have a $40-million treasury, and thus are in a position to give a local full strike or other support.
- The Teamsters have strong striking power, principally because they have a hold on much of the nation's transportation facilities.
- The Teamsters also use an individual pocketbook approach, pointing out that their per-capita international dues are only 70¢ a month (OCAW's are $2 monthly).

**In the final analysis, the Teamsters' big pitch is their bold assertion that they can take on and lick the big oil companies.**

They are also capitalizing on the argument that oil workers need the Teamster strength in bargaining for more job security, and for protection against "downgrading" of job classifications.

## III. Teamster Handicaps

**There is little doubt, however, that the Teamsters face many obstacles in their planned foray into oil.**

In the first place, the scandals of the Dave Beck era are still strong in many minds, making many people highly suspicious of any Teamster move.

Also, the independent oil unions don't want to be "swallowed up" by a giant union.

That's one reason why OCAW has had little success in winning over the independents.

They want local, not remote, control.

Finally, the weight of company management influence is to be considered. In a close contest between two or more unions, the balance of power is likely to fall to the one most acceptable to management.

If this is the case, it isn't likely the management would support the Teamsters over a local, independent union —or over OCAW.

## IV. What Lies Ahead

**It's entirely possible that the Teamster move may produce more noise than results.**

Some observers feel that the independents are "flirting" with Hoffa in order to throw a scare into management.

Others predict that the Teamster "raids" may well cause the independents to unite with each other—at lease loosely—to protect their independence.

And, clearly, the Teamster move is spurring OCAW into new organizing activity.

However, whether the Teamster move makes headway or not, it is likely to leave a larger imprint on oil labor than any other development in recent years.


**NEXT WEEK in Petroleum Week**

**Just how far have we come in developing the "automatic pipeline"? More important, where are we heading in pipeline automation, and how fast are we advancing?**

**And most important of all, what effect is pipeline automation having on the oil and gas industry as a whole?**

**Read next week's Special Report/The Automatic Pipeline to get the latest answers to these vital questions.**

# All-Arab Pipeline Endorsed by Page

**The controversial proposal for an all-Arab pipeline for the Middle East has been tentatively endorsed by a key industry figure, Howard W. Page, director of Middle East affairs for Standard Oil Co. (N.J.)**

The project is now under study by the Arab League's Economic Committee.

"If a definite proposal finally emerges which is realistic and competitive," Page said, "I feel the industry should give it careful and understanding consideration."

Page detailed his views before a meeting of the Middle East Institute, in Washington last week:

"Basically, a large-diameter pipeline from the Persian Gulf to the Mediterranean should show a better return on investment than tankers to do the same job.

"The problem of fitting a large pipeline into the transportation pattern and organizing the commitments for use of the line is not an easy one. At present there are some 300 tankers tied up, and many operating at reduced speeds to keep their crews employed. New tankers are coming off the ways in record numbers. Tapline is operating below maximum capacity.

"However, such a project needs several years for organizing, financing, engineering, and building, and in several years the transportation picture could be considerably different, particularly if it were planned that way to fit additional pipeline capacity."

**"This is an unusual project", Page observed, "in that from four to six countries would be involved.** No one oil company would feel justified in furnishing the capital, nor could one company utilize more than a small part of the capacity.

"Therefore, an oil industry project would require participation by a large group of companies of different nationalties and different sources of supply. From experience, I can say that to organize such a company, except in the case of dire necessity, is an almost impossible task.

"But many of the problems of joint oil company ownership would be eliminated if the project were organized and financed by an Arab entity, with the agreement and backing of the governments concerned.

**"Therefore this may possibly be a unique opportunity for Arab cooperation to carry out a project which can have a natural advantage over competitive forms of transportation, and also one which could not easily be accomplished by the oil industry.**

"To my mind, its success will depend almost entirely on a realistic approach by its promoters. For example, they must meet competitive conditions and provide adequate assurances of performance to wean shippers away from more flexible tankers and induce them to make the throughput commitments necessary to obtain financing."

**On the other hand, Page cautioned against going along with unsound or impractical Arab projects just because they are labeled "national aspirations."** He cited demands for petrochemical plants and refineries in areas where these would be economically unfeasible, and the impractical "dream" of some producing nations to expand their participation to oil operations abroad.

"Attempting to buy good will by such expedients to satisfy so-called national aspirations," Page warned, is not only basically unsound, but could "boomerang and weaken the long-term relationship of mutual respect and basic identity of interests so important to both of us."

**Page also warned against recent proposals for joint action by leading oil exporting nations to control production and prices.**

He characterized these as "dream-world air castles."

The Jersey Standard director said such aspirations were based on the mistaken theory, first, that oil supplies are essential and confined to only a few places in the world, and, second, that joint action to control supplies by the governments of these few areas would make it possible to dictate terms to customers.

The trouble with this theory, Page declared, is that oil in quantity is being found in many new places in the world, and enormous alternative fuel sources lie ready to be tapped.

"Joint arrangements among governments of producing countries to control production for their own ends," Page observed, "would last only as long as it would take the consuming areas to develop the necessary supplies elsewhere . . . Once developed, the other sources would not be shut back even if the oil again became competitive. In other words, the loss of business would be permanent."

# Nuclear Shale Oil at $3 a Bbl.?

**The government is now estimating that shale oil could be produced by use of a nuclear explosion at a cost of between $2 and $3 a bbl.—including a "normal profit."**

This estimate—clearly labeled as a "very rough one"—was given the industry last week by Carl C. Anderson, chief petroleum engineer for the Bureau of Mines, in a talk to the North Texas Oil & Gas Assn.

The estimate was made as a partial reply to cost questions that industry officials had raised, after the government had proposed that the industry share with the government the expense of an experimental underground blast (PW—Jan.2'59,p10).

**A wide range of cost items, including capital and operating costs, was considered in reaching the per-barrel cost estimate.**

Anderson said the project is planned to operate ten years, with capital costs depreciated and amortized over this period.

"Furthermore," he said, "the estimate assumes a fixed earning on invested capital.

"The earning is fixed at 12% per year on the total investment, or 21% on the net investment." He said the estimates are based on past underground nuclear tests, projected for probable results from oil shale deposits in Colorado.

**The probable cost of an explosion, followed by in-situ combustion methods, would run between $4.7-million and $6.2-million.**

This would include the cost of some necessary experimentation before the actual project could be got under way.

**Estimated oil recovery would be 3,000 b/d, or a total of 11-million bbl. over a ten-year period.**

After the explosion, the geometry of the broken zone would be explored by core drilling to determine the extent and the degree of fracturing.

This and other data would be required in order to design an in-situ combustion process and a plant to recover shale oil from the fractured zone.

**Government consideration is also being given to nuclear explosion in petroleum reservoirs,** although this study is not nearly so far advanced as the one on oil shale.

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# What's New / IN THE INDUSTRY

**Cash considerations will not be permitted in exchanging imported oil for domestic crude, Interior Secretary Fred Seaton ruled last week.** He reached that decision after it was reported by Platt's Oilgram, a McGraw-Hill publication, that some refiners were making trades of imported oil for domestic oil which involved cash ranging from 60¢ to $1 a bbl. Seaton added that exchanges did not have to be on a barrel-for-barrel basis.

Imports Administrator Matthew V. Carson commented that oil-for-oil exchanges won't be investigated by his office unless the ratio of imported crude traded for domestic seems "unreasonable."

**Seaton says he hopes mandatory import controls will "serve as a stabilizing influence" for domestic crude prices.** But he warns: "There's a difference between stabilization and prices just going up and up and up."

•

**The Oil, Chemical & Atomic Workers this week defeated the Central States Petroleum Union on ground generally held by CSPU.** In a National Labor Relations Board election, OCAW was awarded, 416 to 317, the right to represent production and maintenance employees at Indiana Standard's Sugar Creek (Mo.) plant. This is the first time OCAW has won over CSPU in organizing Indiana Standard employees, and according to an OCAW spokesman, "may represent a significant breakthrough."

•

**A new bill introduced last week in the Alaska Legislature would give a single leaseholder 1-million acres for exploration,** twice the maximum previously proposed. Under this bill, which follows more closely than the earlier one the recommendations of the petroleum industry, the total acreage permitted a lease holder would be divided equally between uplands and tidelands.

•

**The Texas Co. will ask stockholders to approve changing its name to Texaco Inc.,** to capitalize on the goodwill and acceptance of its trademark. Directors, in recommending the change, which is to be voted on Apr. 22, said the proposal is the result of several years of intensive study.

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**A tentative agreement for Continental Oil Co. to acquire a two-thirds interest in San Jacinto Petroleum Corp. has been reached** by the managements of both companies. The plan, involving a stock exchange, must be approved by both boards of directors and by San Jacinto stockholders.

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**General Petroleum Corp. is preparing for exploratory drilling on a 455,573-acre tract in Alaska, under a contract with the Interior Dept.** The tract is located in the Becharof-Egigik area, near Bristol Bay, on the north side of the Alaskan peninsula. General must drill at least four tests during the five-year contract period, with the first to commence not later than Dec. 31.

•

**The crude price cuts in world markets spread to Canada this week, with Imperial Oil trimming postings 14¢ to 17¢ a bbl. for light crudes.** The reductions, effective Mar. 24, cut Imperial's postings for Redwater crude to $2.42 a bbl., Leduc Woodbend to $2.53, Golden Spike to $2.47, Pembina to $2.38, and Virden to $2.31.

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# Looking Ahead in Washington

McGraw-Hill
Washington
Bureau
March 27, 1959

**The Oil Import Administration will run a monthly check on imports of residual fuel to guard against shortages.** President Eisenhower has given Interior Secretary Fred Seaton specific authority to adjust the allowable level for residual imports—on a month-by-month basis if necessary. Seaton has passed the authority to Import Administrator Matthew Carson. So Carson will be able to raise the level if he believes residual to be in short supply. And although the Oil Import Administration officially keeps clear of pricing, Carson can be expected to keep a weather eye on any residual price increases, too.

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**Washington now has two new entries for the old alphabet game: OIA and OIAB.** The industry probably will have to get used to the new designations—for Oil Import Administration and Oil Import Appeal Board. Both units are expected to be active for some time to come.

**Officials hope to keep the Oil Import Administration from becoming a big government bureaucracy, however.** So far, there are no signs of a deluge of red tape, as some companies had feared. Administrator Carson will continue in his job as director of the Office of Oil & Gas, which is some indication that the OIA isn't planned as another Federal Power Commission. The new office will, however, require more personnel and probably special funds from the Interior Dept. Some increased paperwork for companies can be expected, but mostly on any appeals for higher quotas.

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**One member of the Oil Import Appeal Board is expected to be Royce A. Hardy, of the Interior Dept.** Hardy is Assistant Secretary for Mineral Resources and, as such, is a good bet to be put on the appeal board. Two other members will be appointed, to represent the Defense and Commerce Depts.

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**Government officials have turned thumbs down on a quota for Iron Curtain residual oil—but not for political reasons.** OIA has rejected a request from an individual for an allocation to import residual fuel oil from the Black Sea area. He was refused because he was not an importer in 1957, as the regulations require. But if a company that was an importer two years ago wanted to import oil from Rumania, OIA probably would approve, provided all other rules were met.

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**The Kefauver pricing bill, S-11, is in for another year of ditch-by-ditch fighting.** Sen. Estes Kefauver (D., Tenn.) has finished subcommittee hearings, the first step of his new campaign for passage. But oil jobbers and other foes of the bill still plan to oppose him at every turn. Subcommittee clearance for the bill is expected, but opponents are looking to the full Senate Judiciary Committee as a roadblock.

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**A House committee is shying away from Treasury Dept. proposals to limit the application of depletion.** The House Ways & Means committee has pigeonholed pleas by Treasury Secretary Robert Anderson that depletion be redefined for mining and for oil and gas to prevent companies from extending the provision to finished products.

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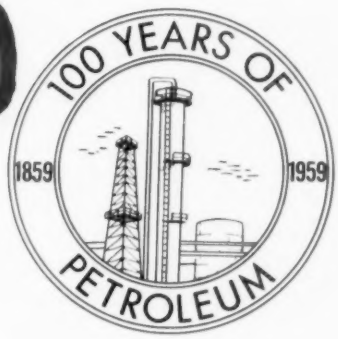


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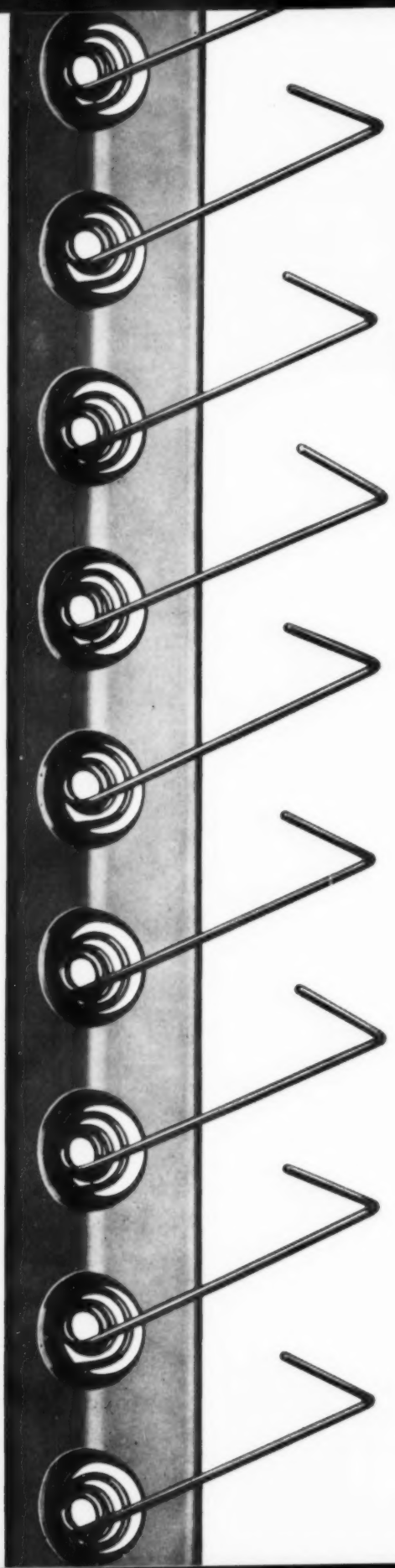

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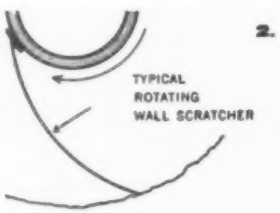


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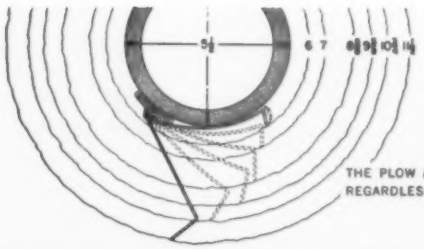

DEPT/Exploration, Drilling, Production

# New Sun Tool Takes Drillstem Logs

**Electric logging of freshly-drilled formations is now possible with Sun Oil's new self-contained mechanism.**

**A new drillstem tool that permits electric logging of freshly-drilled formations has been developed by Sun Oil Co.**

Such a drillstem logging tool has been a long-time petroleum industry objective, with considerable effort going into the search on many fronts.

That's why Sun's announcement—made at this week's New Orleans meeting of the Southern District of API's Production Division—has stirred strong interest in the industry.

Sun's P. E. Chaney, F. M. Mayes, John Bennett, and J. W. Jones told the API group that the self-contained recording mechanism has already been field-tested successfully.

**Three important economic and operating benefits to the drilling industry should result from use of the new tool, according to Sun's engineers.**

The benefits, they say, are:

(1) Reduced logging costs, resulting in large part from the fact that much less rig time is required to obtain a log with the new tool.

(2) Improved formation evaluation, inasmuch as freshly-drilled formations can be logged before there has been much time for invasion by the drilling fluid.

(3) Substantial reduction of the hazard of losing the hole while logging, because logging can be achieved without removing the drill string from the hole.

**The new tool consists of a measuring and recording instrument body carrying at its lower end a long, flexible electrode assembly.**

The body of the tool is approximately 10 ft. long and 2 in. in outside diameter. The instrument contains the measuring and recording equipment, a logging-current generator, separate signal amplifiers for each of the curves to be recorded, and a battery pack to supply electrical power. One set of mercury batteries will operate the tool for 30 hours.

The electrode assembly, or wand, is designed to pass through the water course of a jet bit and to project into the open hole below.

Near the top of the instrument are the "parachute"—a rubber device shaped as it is named—and the drag assembly; they are used to control the speed of descent of the instrument.

A standard core-barrel fishing head is provided at the top of the assembly to facilitate handling on the rig floor and to permit recovery of the instrument by wireline.

**Whenever a log is desired, the tool is pumped down through the drill string, coming to rest inside the drill collar.**

The instrument is loaded in the drill pipe with the electrode assembly uncoiled to its full length.

The pressure drop produced by the weight of the instrument holds the parachute in contact with the walls of the drill pipe and limits the velocity of the instrument to approximately the mud velocity.

This is desirable, the Sun engineers said, in order to prevent collapse of the electrode assembly, which could result if the instrument case were allowed to fall freely through the mud column.

The drag assembly is designed to control movement of the instrument through the drill collar, and, therefore, performs no function during the trip down the drill pipe.

The instrument may be pumped down at any reasonable rate, but the circulating rate is adjusted, before the instrument enters the drill collar, to a predetermined rate established by the bore of the drill collar, the size of the gage ring, and the loading of the drag springs.

In tests conducted so far, a circulating rate of about 250 gal. per minute has been used.

As the instrument enters the drill collar, the spring-loaded drags engage the reduced bore with sufficient force to more than support the weight of the instrument.

**The landing of the instrument case in logging position in the drill collar is indicated by an increase in circulation pressure.**

This increase is on the order of 200 psi.

Mud passages are provided around the body of the instrument, so that circulation can be maintained with the instrument in logging position, if such action is found necessary.

Travel of the instrument down through the drill string is halted by a stop inserted between the bit and the drill collar.

**The instrument is moved through the interval to be logged during the normal process of coming out of the hole—either part way or all the way.**

If the log is taken just before the bit is to be changed, the entire string is pulled, and the tool is removed from the drill collar at the surface.

Otherwise, the drill string is raised only through the logging interval, and the tool is then recovered on a wireline.

**Conventional resistivity and self-potential logs are recorded downhole on 1/2-in. magnetic tape.**

This magnetic tape may be played back at the surface to produce a paper or film record.

An adjustable timing mechanism is set to delay the start of actual recording by as much as 45 minutes after the instrument is inserted in the drill pipe at the surface. This allows for the time required to pump the tool down into logging position.

At the expiration of this delay period, the self-potential response is automatically adjusted to center scale and the tape drive is started. Sufficient recording tape for 80 minutes of operation is provided. At normal hoisting rates, this allows logging of upwards of 3,000 ft. of hole with one pass of the instrument.

**The expected accuracy of the various electric logs is approximately 1% of the full-scale value selected, according to Sun.**

Logging circuits are designed to maintain this accuracy at temperatures up to 300F. The instrument case will withstand bottomhole pressures of 15,000 psi.

Depth-control information is recorded on a separate tape channel. During the first surface playback of the tape, the depth scale is checked against the driller's depth at each stand. Any necessary corrections to the depth scale are made at this time, so that all subsequent reproductions will have a depth scale corrected to the driller's depth.

During playback to a paper record, the operator can choose any desired depth scale, and has considerable freedom in the choice of full-scale sensitivity of the logging curves.

The playback apparatus uses tape speeds approximately ten times the downhole recording speed, so that a paper record is available in less than ten minutes after the tape is removed from the instrument.

# How Plastics Consolidate Sand

**Improved methods of consolidating sand with plastics show promise of minimizing a problem that has plagued the oil industry.**

The sand problem in oil and gas wells ranges widely in severity. But regardless of the severity, the objective of sand-control work is to prevent any sand from entering the well bore.

J. H. Edwards, R. E. Williams, and C. L. Prokop, of Humble Oil & Refining Co., and J. A. Harmon and J. O. Hendrick, of Dowell Division of Dow Chemical Co., summarized developments in this field at this week's meeting of the Southern District of API's Production Division.

**Lab and field tests have proved the effectiveness of an improved technique for consolidating sand with plastic,** the Humble engineers said.

The technique involves a catalyst preflush, a phenol-formaldehyde plastic solution, and a cresol-oil overflush.

The preflush—of acidic stannous chloride—is used to condition the surfaces of the sand grains so that the reaction characteristic of the plastic composition is not altered when it is pumped into the sand.

The enriched phenol-formaldehyde plastic is used to cement the sand grains together. The overflush is used so that the positive displacement of the plastic composition from the well bore into the formation can be accomplished without harming the reaction characteristic of the plastic composition.

The Humble trio said laboratory results show that a field sand consolidated by this technique has high compressive strength and high permeability.

In field operations, they said, loose sands can be consolidated in about 24 hours, without use of a rig.

This sand-control technique has been used on a routine basis to treat more than 40 intervals in sand-problem wells. Slightly more than 80% of the treatments have been successful, the Humble engineers reported.

**Sand-consolidation plastic has "proved to be an effective, long-lasting remedy" for the problem of unconsolidated sands in the Gulf Coast area,** Dowell's Harmon and Hendrick said.

The two said that previous difficulties in applying the plastic have been largely eliminated, and that more than 80% of the treatments have been successful.

Harmon and Hendrick said that the sand in the vicinity of the well bore is saturated with liquid, unset plastic.

The plastic acts as a cementing material, preventing sand migration by consolidating it in place, rather than merely blocking it from the well bore, behind a permeable liner. The well bore remains clear and unobstructed by screens, liners, or gravels, they added.

Jobs are more easily performed, therefore, and less expensive, because they can be carried out without moving in a workover rig.

**There are several factors, however, that can make such sand-consolidation jobs fail,** the Dowell engineers said.

Harmon and Hendrick said some of the factors believed responsible for failures include:

- Excessive contamination of the liquid plastic with oil or brine during placement, which may result in an unsatisfactory sand shut-off.
- Perforating through mud, which often results in failure. The plastic cannot penetrate one or more plugged perforations, which later, during production, open up and allow sand to flow into the well bore.

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# ON MUD LINES –

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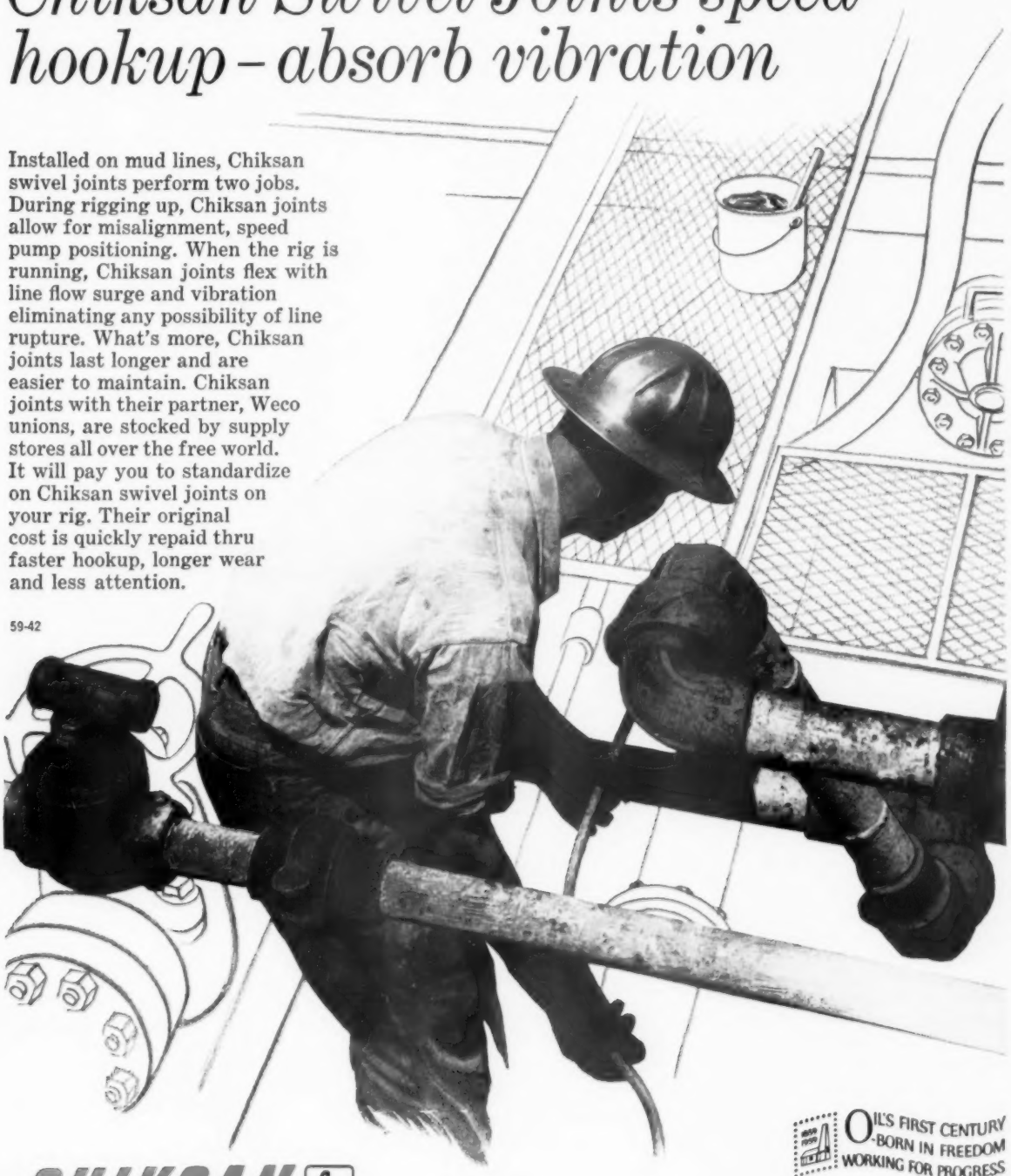

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# Texas Panhandle Drilling Quickens

**Pre-Permian drilling in the northeast Texas Panhandle appears to be headed for another big year.**

Eight strikes in the area—which includes all of Ochiltree, Lipscomb, Roberts, and Hemphill Counties, plus portions of Hansford, Gray, Hutchinson, and Wheeler Counties—have been granted discovery status by the Texas Railroad Commission so far this year.

Of these, five have been oil wells, and three have been gas.

This compares with a total of 26 new oil pools and 10 new gas pools opened last year, and 17 oil finds and 19 gas hits in 1957. In 1956, the comparable figures were 20 oil and 14 gas.

Although discovery allowables granted for oil outnumber those for gas, the bulk of the production from the area is gas. This rather contradictory fact is explained by a geologist active in the area:

"All gas well drilling is done on 640-acre spacing, since one gas well is calculated to drain that large an area. Even though a gas well may be one or two miles or perhaps farther from production, it is often set up as an extenison to the nearest established field.

"Future development may prove the reservoirs separate, but the well nevertheless is considered as a field development rather than a discovery."

**One reason behind the attraction to this area is the high success ratio.**

Despite a well saturation of less than one for every 10 sq. mi., wildcatting since 1954 has resulted in either oil or gas production in more than 50% of the tests drilled.

And development holes, although drilled on much wider spacing than in many other areas, have been successful about 85% of the time.

The big reason behind this high success ratio—and the reason the area looks good to operators active there—is that each well drilled opens multipay production possibilities.

**A good example of drilling success is the record made by Apache Oil Corp., a Tulsa independent which has been among the most active in the area for several years.**

During the past year, Apache has drilled five wildcats and 20 development holes.

Of the wildcats, three resulted in multipay discoveries, and two were single-pay strikes. One of the single-pay wells was completed as an oil well; the other as a shut-in gas well.

Of Apache's 20 development tests, 18 were successful; the other two were dry holes. Four of the producers made dual-pay oil and gas wells, and 14 were completed as shut-in gas wells.

Apache is one of about 20 independents and top major companies that have been active in the area in recent months.

**Prospective oil and gas producing acreage in this area is almost entirely leased, and has been for years, despite relatively little activity prior to 1954.**

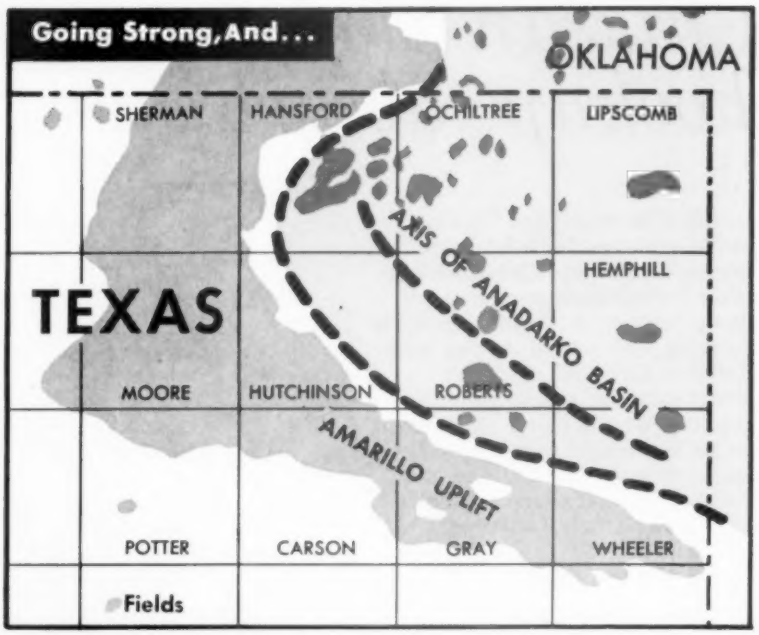
Most of the leases are held by major companies, with independents working farmout deals for exploratory drilling. The most common farmout arrangement appears to be on the basis of a one-eighth interest in any gas production found, and one-sixteenth for oil.

Bonus prices—when acreage is available—generally run upwards from $25 per acre for a standard five-year lease. Some operators report that recently they have been able to deal for the better acreage only by giving one-eighth overrides, plus penalty clauses if drilling is not commenced within a specified time—generally 6 to 12 months.

**Lack of natural gas lines out of the area so far has been a definite drawback to development drilling.**

Because there is no gas line, all gas discoveries are completed as shut-in wells.

One independent, for example, says it would immediately develop some 7,000 proved acres in Lipscomb County if it could sell the gas.



**Best bet at present for a gas outlet is a proposed major trunkline that would run from West Texas and the Panhandle to California.**

The 1,305-mi. line, currently awaiting FPC approval to begin construction, is to run to the California border, where it will connect with the lines of Pacific Lighting Gas Supply Co., which supplies Southern California and the coastal area.

The company that will build the line, Transwestern Pipe Line Co., is owned jointly by Monterey Oil Co.; W. K. Warren, of Tulsa; and J. R. Butler, of Houston.

**It is considered very unlikely that oil production in this area will ever reach significant figures, although numerous small pools undoubtedly will continue to be found.**

The lack of major oil fields cannot be explained through any one factor, but likely is related to migration and accumulation of hydrocarbons in the highly lenticular sands that characterize the area.

So far as is known, all oil now being produced in the area is being trucked. Little hope is held for the laying of crude gathering lines unless major oil accumulations are discovered.

**Drilling costs are comparable to other producing areas in which similar depths and formations are encountered.**

One major company operating in the area reports expenditures of about $95,000 to $100,000 to drill and equip a 7,500-ft. well producing from the Morrow (Pennsylvanian). This cost jumps to about $160,000 for an 8,500-ft. producer.

Conventional rotary drilling techniques are employed for the most part, with little air or gas drilling reported. Lost-circulation problems, which plagued operators a few years ago, have been largely overcome through increased knowledge of the area and advanced technology.

**Essentially, all production in the area, whether gas or oil, is from some formation of Pennsylvanian age.**

Some Mississippian production has been found, but it has been disappointing for the most part.

Of the Pennsylvanian pays, the Morrow sands are by far the most important—having accounted for at least 18 commercial oil or gas discoveries in the past 14 months.

Oil and gas accumulation in these sands, comprising more than half-a-dozen separate producing members, has been entirely stratigraphic to date.

Rated according to number of discoveries during 1958-59, the Cleveland sand (also of Pennsylvanian age) is next to the Morrow in importance. Following closely are the Tonkawa, Atoka, and Des Moines, all of which have contributed two or more significant discoveries in recent months.

Morrow sand reservoirs have been found to be mostly sub-areal sand bars trending into shale. For the most part, these pools have varied from 3 to 5 mi. in length, and seldom exceed 1 mi. in width.

**Nobody knows for sure what lies below the Mississippian in the deeper parts of the Anadarko Basin—which covers this area—and not many geologists are guessing.**

It's generally believed that some of the pre-Mississippian systems pinch out to the north of the basin's axis, but no bit has yet probed to depths necessary to prove this theory.

The deepest hole drilled to date in the northeast Texas Panhandle is the Magnolia No. 1 D. D. Feldman, a Hemphill County wildcat that bottomed at 15,997 ft. It was plugged back and completed as a Tonkawa gas discovery for 8-million cf/d of gas through perforations at 7,556-96 ft.

Most operators consider it unlikely that a test will go below the Mississippian any time soon. As one major company expressed it:

"Seismic information hasn't indicated any structure as far down as we've been able to go. And so far, most Ellenburger production found in other areas has been anticlinal. Right now there is no incentive to drill deeper."

## Look-Alikes, But . . .

**Each of these nine National Supply Co. pumping units is of different size. The nearest is 17½-ft. high, and the last only 4½-ft. high. They will be geared to work in perfect unison at the International Petroleum Exposition in Tulsa.**

**Geologically, the northeast Texas Panhandle is located in the extreme southern portion of the Anadarko Basin,** itself a vast geosyncline extending north into the Oklahoma Panhandle and southwestern Kansas, and southeast to the Pauls Valley-Arbuckle Uplift of Central Oklahoma.

The southern boundary of the Anadarko Basin is the Amarillo Uplift, a series of buried granite ridges without any surface expression.

The Stratford Dome, lying mostly in Sherman County, is generally conceded to form the western edge of the Anadarko Basin, although this is subject to some controversy.

**Subsurface geology has been the only effective means of delineating oil and gas accumulations.**

Geologists have tried virtually every means at their disposal for isopach mapping and correlation work.

Painstaking microscopic and fluorescent examinations of cuttings, mud analysis, cores, drillstem test results, and all types of logs are being utilized to find new pays, and expand the geological knowledge of the area.

Seismic, magnetic, and gravity surveys haven't proved effective, and surface geology is of no value.

Three main reasons are given for the general lack of results with the seismograph: (1) the stratigraphic nature of the pools; (2) a thick overlying evaporite section, which distorts reflections; and (3) the general absence of regional dip reversal.

**The Texas portion of the Anadarko Basin paid off for the first time in 1954.**

During that year, the Texas Panhandle as a whole felt the biggest push in drilling activity since the 1926-29 boom years, and for the first time the value of production found in the northeast counties exceeded the outlay for exploration.

Necessary development of the vast reserves known to exist in the Panhandle field during the war years left few funds for exploratory drilling to the north. In addition, lack of surface geology and poor seismic results led many operators to believe the area lacked production possibilities.

But gradual expansion of exploratory effort following the war culminated in several important finds during 1954.

The first oil was produced in Hansford County; the first Permian gas production was found in Roberts County; and the first Pennsylvanian oil was uncovered in Gray County.

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*This message has previously appeared in the various journals. Responses proved that it was timely and factual to the extent that it should be repeated.

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# Fracturing Aids Input Wells, Too

**A growing number of operators are finding that fracturing increases water input, boosts production, and reduces the injection pressure required. The technique is being used principally in Illinois and Oklahoma.**

**Formation fracturing is beginning to prove its worth as a means of boosting injection rates and lowering working pressures for input wells in waterflood projects.**

Illinois and Oklahoma—two states with the greatest percentage of oil produced by waterfloods—so far have been the areas most active for input-well fracturing.

But the method is believed to have been tried, at least to some extent, in virtually every oil-producing state that has secondary recovery.

**Initial work started in the Illinois Basin in 1954. Since that time, the method has become increasingly important to waterflood operators there and in northeast Oklahoma.**

Although the tremendous number of small operators and servicing companies make impossible an accurate estimate of input wells fractured, one of the largest service companies reports 63 jobs performed in Oklahoma last year. Almost none were done prior to 1957.

This same company reports having fractured 48 input wells in the Tri-State area (Illinois, Indiana, and Kentucky) during 1955; 64 in 1956, 90 in 1957, and 95 last year.

**Fracturing has been found to reduce operating pressures significantly, minimizing the need for high-pressure injection equipment.**

Many injection wells refuse to accept significant amounts of water, due to low permeability of the reservoir. Other wells become plugged by precipitates from the injected water after flooding has commenced. Fracturing often is performed simply because the well will not take water properly.

In the case of low permeability, fracturing increases injection capacity by affording additional sand-packed fractures through which water can travel.

When plugging has occurred, the treatment provides a valuable scouring action, which cleans the face of the pay.

In almost all wells, injection capacity has been found to decline gradually with age. This is due primarily to the buildup of mineral deposits, but may also occur from the outset in producing wells converted for injection purposes.

Fracturing has proved beneficial in both instances.

**As in oil-well fracturing, treatment specifications—such as fluid volume, amount of propping agent, and injection rate—will depend almost entirely on specific formation factors.**

One major service company reports that its engineers are generally recommending the use of gelled water as a carrying agent.

Thickened acid also has been used to some extent, especially in dealing with limestone reservoirs, and ungelled water has been used in a few instances.

Amounts of propping agent used vary widely, running from 1,000 lb. to 20,000 lb. From 1 to 2 lb. of sand per gal. of fluid is the usual mixing proportion.

Injection rates range from 3 bbl. to 16 bbl. of fluid per minute, usually in direct relation to the size of the treatment.

**The possibility of premature breakthrough (channeling) beyond the flood front has been a primary concern to operators considering input-well fracturing. But experience has shown there is little, if any, ground for this fear.**

A spokesman for Earlougher Engineering, a Tulsa consulting firm which has engineered numerous floods in Oklahoma, Kansas, and Texas, reports that the firm has recommended the fracture of input wells whenever applicable, and that it has not yet observed any detrimental results.

Nor do any operators who have used frac treatments on their water-injection wells report any ill effects.

Nevertheless, one service company cautions that "care must be taken to control the fracturing treatment, limiting the radial penetration so that it will remain behind the calculated injection sweep front."

**Although no actual breakthrough of flood fronts is reported, there have been many cases of material increase in water production.**

One Oklahoma operator had a daily production of 18 bbl. of oil and 52 bbl. of water from a five-spot pattern before fracturing the input well. Oil production jumped to 24 b/d following treatment, but water return also increased, to 96 b/d.

This operator pegs his average water increase on all wells at about 20%.

**While several major companies have done work in fracturing input wells, independents have led the way, just as they did in the early days of waterflooding.**

Keener Oil Co., of Tulsa, is one independent that has had good results in most of its projects.

In the Weber pool of Washington County, northeast Oklahoma, for example, Keener recently had several water injection wells taking only 10 to 15 b/d of water, with surface pressures from 800 lb. to 900 lb. The reservoir is a 15-ft. Bartlesville sand section topped around 1,200 ft.

Following frac, the wells' input capacity was boosted to 115-120 b/d, with only 400 lb. surface pressure required. Treatment was with 1,000 gal. of gelled water and 1,000 lb. of sand, injected at the rate of 6 bbl. per minute. A 100-bbl. salt-water flush was used as a follow-up.

Keener performed its original input-well frac job two years ago, and now has 30 wells that have been treated.

**One independent operator, with waterflood acreage in the Brock pool, Carter County, Okla., has fractured 15 of his 33 input wells in the area.**

This reservoir—the Deese sand of the Des Moines series—requires much larger treatments, with 10,000 lb. to 20,000 lb. of sand used.

This result was reported for an "average" well in the Brock pool: 30 b/d of water had been injected under 1,300 lb. surface pressure; following treatment, injectivity increased to 130 b/d under the same surface pressure. Injection is through perforations, four to the foot, opposite a 35-ft. pay section.

**Higher water-injection rates after frac treatment have boosted oil production in most instances where fill-up has been attained prior to treatment.**

A Keener spokesman says that one of the company's leases was running 35 b/d of oil to tanks before fracturing of three injection wells. A slight production "kick" was noted seven days after treatment, and, by the end of the second week, oil yield had increased to 48 b/d from the two producing wells affected by the fracture.

The frac job was performed about a month ago, and no drop in production or injection rates has been noted. And, adds the Keener spokesman, "from past experience, we don't expect any."

# THE MIGHTY-MITE IN WATER ABSORPTION

ANOTHER
PARKERSBURG
OUTSTANDING
ENGINEERING
ACHIEVEMENT

# NEW SPHERICAL GLYCOL UNIT

Patents Pending

With a basketball-size* spherical absorber, Parkersburg's new Mighty-Mite represents one of the most **outstanding engineering achievements** in glycol dehydration history.

Field tests prove that a dew-point depression of 65° F. can be guaranteed, with dew-point depression as high as 100° F. not uncommon.

The Mighty-Mite is a skid-mounted, compact unit no larger than the top of an ordinary office desk.

**MIGHTY-MITE Features:**

- Reduced purchase, operation and maintenance cost.
- Simple, trouble-free operation.
- Ideal for off-shore operations because of its light weight, space-saving size.

* for 3 mm cu. ft./DAY CAPACITY.

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# What's New / IN EXPLORATION, DRILLING, PRODUCTION

## Court Upholds Texas Proration Formula

**An attempt to change the proration formula for Normanna gas field, Bee County, Tex., has been defeated in court.**

After a two-week trial, District Judge Charles O. Betts upheld the Texas Railroad Commission's proration formula for the field, which is based two-thirds on acreage and one-third on wells.

The suit arose from the legal hassle between Atlantic Refining Co. and others against Bright & Schiff, a Dallas-based firm that is drilling on a 1/5th-acre plot in the field (PW—Feb.13'59,p28).

Attorneys for the Atlantic group argued that in this case the well factor was too great, and that the Bright & Schiff well would drain $2.5-million worth of gas liquids from beneath acreage surrounding the 1/5-acre tract.

Bright & Schiff had previously won two other court decisions—one in which Atlantic and the others attempted to upset Bright & Schiff's exception to Rule 37 (spacing rule), and the other directed toward protecting the firm from interference from other operators.

Bright & Schiff has filed a $2,825,000 damage suit against Atlantic, Tidewater Oil Co., and Dudley Daugherty, charging that the defendants tried to hinder and prevent the drilling of the well.

•

**A plea for wider well spacing as a means of correcting what he terms "abuses and inequities" in oil and gas production was made last week by John Mitchell, of Christie, Mitchell & Mitchell.**

Mitchell, speaking before the annual meeting of the North Texas Oil & Gas Assn., pointed out that his remarks should not be taken as being critical of the Texas Railroad Commission, but rather of some of the statutes under which the commission is duty-bound to operate.

He was particularly critical of Rule 37 (spacing rule). Mitchell said that any number of examples could be cited to show how the work of prudent operators has been nullified by the insistence of one or two operators on getting exceptions to regular spacing rules under Rule 37.

•

**Two California oil companies are working out arrangements to get drilling rigs on location for exploratory work in Alaska.**

General Petroleum Corp. is negotiating with Humble Oil & Refining Co. to get the rig used for Humble's 14,374-ft. duster on the Alaskan Peninsula. GP wants the rig, owned by Rowan Drilling Co., Ft. Worth, for a wildcat in the Bristol Bay area.

Union Oil Co. of California is closing a deal with Halbouty Alaska Oil Co. for the rig presently being used for Halbouty's Halasko-King Oil Co. No. 1, on the Kenai Peninsula. Union will use the rig, which is owned by Coastal Drilling Co., Bakersfield, to drill a wildcat in section 1-4n-12w, near the town of Kenai, on the beach at Cook Inlet.

•

**Almost 60,000 acres of Montana state land were leased for $145,885 at the Mar. 17 sale.**

Interest in northern Lewis & Clark County, adjacent to areas in Cascade, Teton, and Chouteau Counties, sparked the sale.

Shell Oil Co. was high bidder, paying $30 per acre for 280 acres in Teton County.

Anaconda Co., however, was the most active bidder, taking 98 of the 188 tracts offered.

•

**Alberta's Oil & Gas Conservation Board says it will consider easing its penalty policy with respect to water-oil ratios.**

The board said that, although it felt the penalty policy had been well proved and accepted, "there may be special circumstances in individual fields, such as unlimited water encroachment or other more efficient production processes, which could justify reducing or waiving of water penalties."

•

**Britalta Petroleums, Ltd., has acquired petroleum and natural gas permits totaling 954,208 acres in British Columbia.**

The permits cover an area 70 mi. long and more than 20 mi. wide in the central part of the province.

Britalta plans to begin exploration work on the acreage as soon as weather permits.

•

**Establishment of the Louisiana shoreline from which to measure the offshore drilling areas will require 18 more months.**

Crews from the U.S. Coast & Geodetic Survey have been working to determine the mean low-water levels,

## Sun Develops Multipay Producing Tool

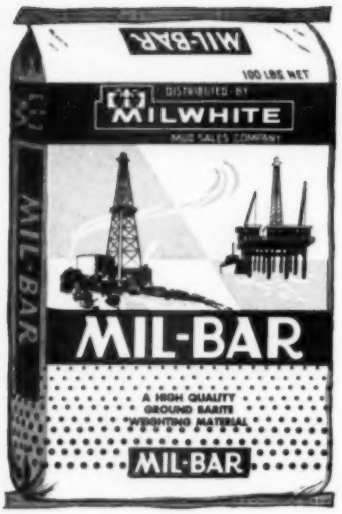
**Sun Oil Co. has developed a new tool designed to produce from two or more zones through one string of tubing.**

Commingling of the production will take place inside the tool, which was developed by Sun's J. W. Hodges. Amount to be produced from each zone can be controlled.

Sun has asked Texas Railroad Commission approval to install and test the device in one of its dually completed wells in North Francitas field, Jackson County.

Sun says use of the tool will eliminate casing annulus corrosion; provide simultaneous depletion of each zone; provide an efficient flow passage for each zone by eliminating annulus flow; remove difficulties caused by paraffin accumulating in annulus-type completions; and utilizes excess energy in one zone to supplement an energy deficiency in another zone.

A Sun official says this plan of operation would prevent communication between zones; afford adequate provision for determining the productivity of each zone through testing of one zone and regulating the orifice to produce a predetermined amount from that zone; and provide adequate control of rates of production.

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HOUSTON, TEXAS

A DIVISION OF MISSISSIPPI RIVER FUEL CORPORATION

from which the southernmost limits of state lands will be determined.

•

**A unitized secondary recovery project encompassing two-thirds of Welch field, Dawson County, Tex., is now in the planning stage.**

Cities Service Oil Co. will be operator of the Flood program, which will cover about 8,600 acres of the northwest portion of the 12,000-acre field. There are 310 wells in the entire field, all of them producing from San Andres limestone at approximately 5,000 ft.

The program is expected to be under way by mid-1960.

Three years ago, Cities Service conducted a pilot flood in the field and obtained good results from the four-well injection pattern.

•

**Standard Oil Co. of California has earmarked more than $1.5-million for permanent onshore facilities to handle oil produced from the company's offshore platform at Summerland** (PW—Nov.28'58,p14).

Facilities will include submarine lines from the platform to the shore, gas-oil separators and compressors on the shore site, automatic custody transfer equipment, a floating-roof 217,500-bbl. tank, a submarine 20-in. loading line, and a pump to fill ships at the rate of 14,000 bbl. per hour.

•

**Standard Oil Co. of Texas is taking steps toward unitization of Sherman field, Grayson County, North Texas—pointing toward a $2.5-million secondary recovery project.**

A meeting of the approximately 2,500 royalty interests in the field will be held May 1 to discuss the proposition.

Stanotex, major producer in the area, proposes that pilot tests be conducted initially in the Baker sand between 7,500 and 8,500 ft. Methods of recovery being considered are waterflood, gas injection, and miscible-phase displacement.

There are 69 wells in the field.

•

**Gulf Oil Corp. plans to waterflood the 1,500-ft. Cisco (Pennsylvanian) sand under its R. J. Miller lease, Wichita County Regular field, North Texas.**

In outlining its plans before the Texas Railroad Commission, Gulf said that 1,322,826 bbl. of some 3,672,000 bbl. of oil originally in place had been produced since the field was discovered in 1913.

•

## Drilling Highlights

**West Texas**—Forest Oil Corp. and Pan American Petroleum Corp. No. 1 E. W. Harris, league 267, Moore County school land survey, Dawson County, was completed for 406 b/d of 39-gravity oil through 3/16-in. choke and perforations at 12,064-88 ft. in the Fusselman. The discovery is 6 mi. north of Breedlove field.

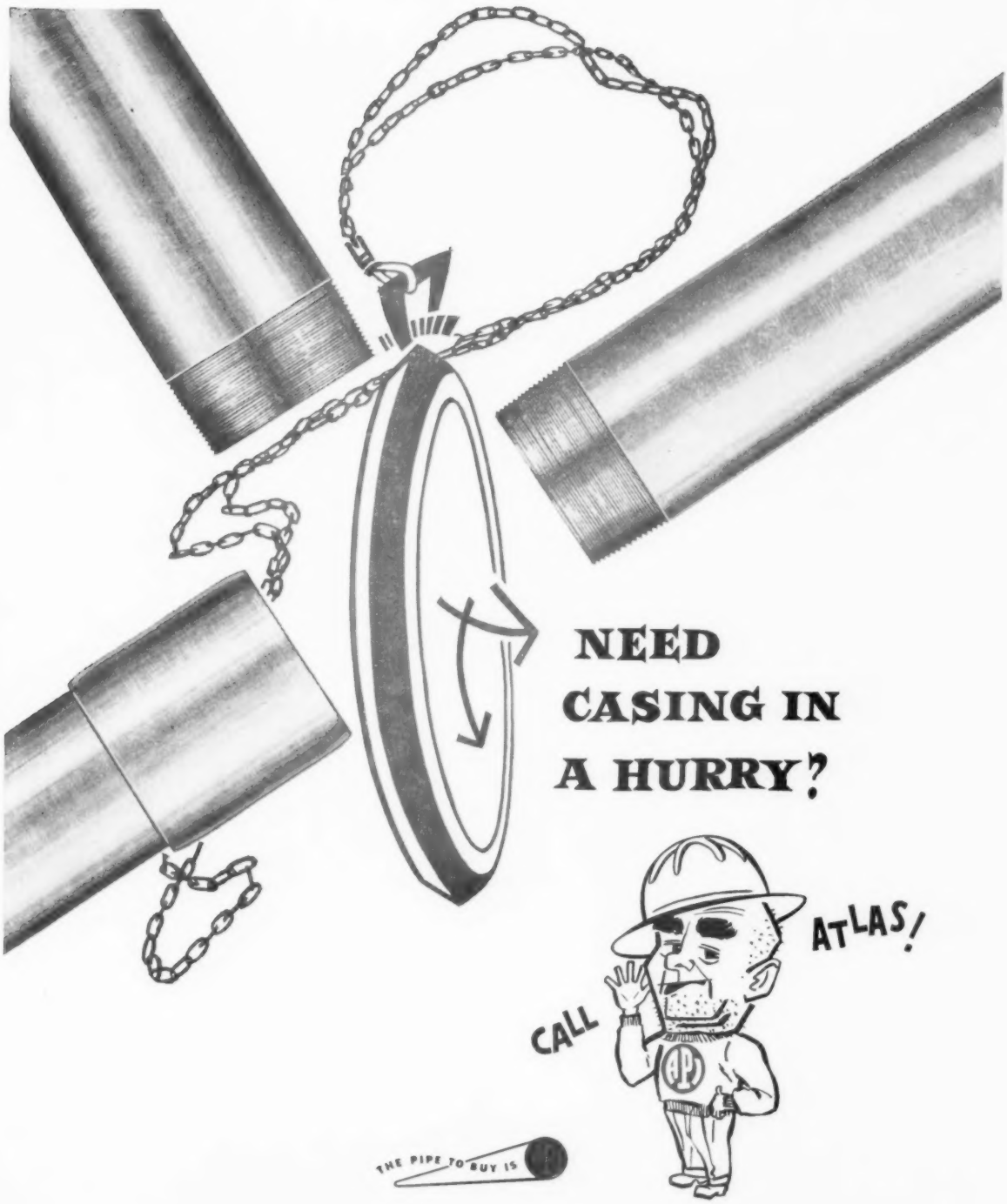
In Crockett County, Pan American No. 1-DL University, section 31, block 7, University lands survey, was completed for 261 b/d of 42.6-gravity oil and 7 b/d of water through ¼-in. choke and perforations at 8,339-45 ft. in the Strawn. The well is 3 mi. northwest of West World Strawn field.

And in East Dollarhide field, Andrews County, Magnolia Petroleum Co. has triply completed No. 4-B Special-Cowden, section 12, block A-55, psl survey. The well flowed 215 b/d of 39.6-gravity oil through 28/64-in. choke and perforations at 10,194-210 ft. in the Devonian, and 257 b/d of 41.2-gravity oil through ½-in. choke and perforations at 11,058-90 ft. in the Silurian. The well also flowed 402 b/d of 45.6-gravity oil through 24/64-in. choke and perforations at 12,583-610 ft., 12,700-16 ft., and 12,728-60 ft. in the Ellenburger, a new pay for the field.

**Mississippi**—Jett Drilling Co. No. 1 Magee, section 17-1n-4e, Simpson County, flowed 397 b/d of 38-gravity oil through perforations at 12,121-41 ft., and 437 b/d of oil through perforations at 12,174-87 ft., in two separate Paluxy sands. The wildcat, 15 mi. southwest of Martinville field, previously tested 217 b/d of 37-gravity oil through perforations at 12,458-82 ft. in the Mooringsport.

**New Mexico**—Harvey E. Yates No. 1 Sweeney-Federal, section 25-18s-32e, Lea County, was completed as a Delaware zone discovery, flowing 120 b/d of 36.6-gravity oil through 14/64-in. choke and perforations at 8,651-55 ft. in the Brushy Canyon. The discovery is 2 mi. southeast of Quercho Plains field.

**British Columbia**—Sinclair Canada Oil Co. et al No. D-39-E Doig River, 39-94-A-16-E, 20 mi. south of Triassic oil production at Milligan Creek, flowed 515 b/d of 39.5-gravity oil through ⅜-in. choke and perforations at 3,840-65 ft. in the Triassic.

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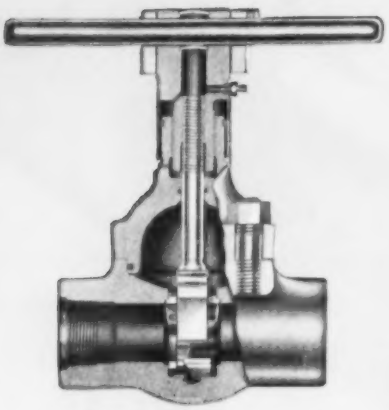
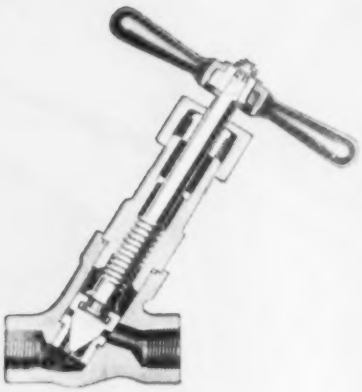
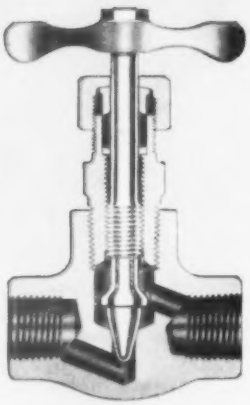
# Rockwell-Built Edward Steel



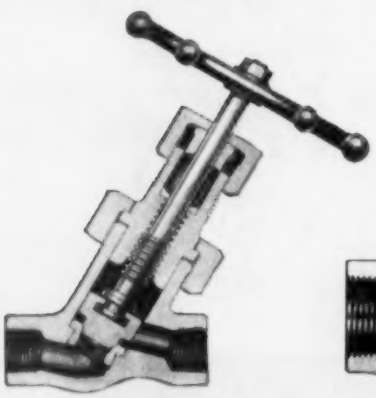
**MUDWONDER MUDLINE VALVES**
**Figs. 2128-3128**
**For pressures to 2,000-3,000 lb WOG**
**Bolted bonnets, screwed or flanged ends**



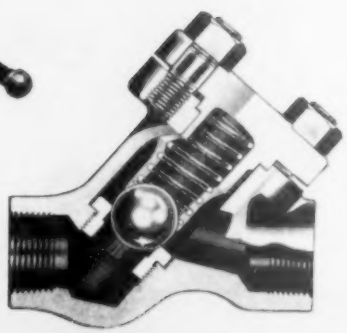
**GLOBE STOP VALVE**
**Fig. 158**
**For pressures to 10,000 lb WOG**
**Screwed bonnet, screwed or socket welding ends**



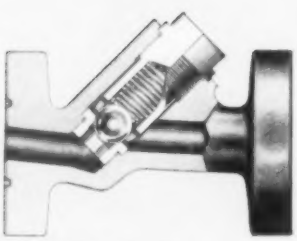
**GLOBE GAGE VALVE**
**Fig. 152**
**For pressures to 4,000 lb WOG**
**Screwed or union bonnet, screwed ends**



**GLOBE STOP VALVE**
**Fig. 2698**
**For pressures to 2,000 lb WOG**
**Union bonnet, screwed or socket welding ends**



**BALL CHECK VALVE**
**Fig. 4632**
**For steam pressures to 600 lb A.S.A. (2,000 lb WOG)**
**Horizontal or vertical**
**Bolted cover, screwed or socket welding ends**



**BALL CHECK VALVES**
**Figs. 5160-9160**
**For pressures to 5,000-10,000 lb WOG**
**Horizontal or vertical, screwed covers, flanged ends**

# Valves Work Everywhere

## *in drilling...production...refining...*

Edward valves are on the job, no matter where you look. From the towering derricks of Northern Alberta to offshore rigs on the Gulf . . . from refineries on the Jersey Flats to California natural gas plants . . . the word is—"You buy a better valve from Edward!"

### Edward Globe Valves

Bodies are drop-forged steel, for greater strength and resistance to erosion. Large-diameter handwheels permit operation without a wrench or cheater; cross-arm Impactor* handle for quick, tight closing is standard on 2" Fig. 158. Figures 158 and 2698 have replaceable seats. Disks—both plug and needle types—are carefully aligned, and seats are lapped for tight sealing. Stems are EValloy,* an exclusive Edward stainless steel, centerless ground to a fine finish. Carefully machined Acme stem threads assure easy operation. Bonnet threads plated by an exclusive EValizing* process for maximum resistance to wear and corrosion. Deep stuffing boxes, with exclusive EValpak* asbestos-graphite packing, assure a tight seal with minimum resistance to stem turning.

### Edward Ball Check Valves

Identical to Edward globe stop valves in body and seat features. Rolled steel bonnet with integral ribs to guide ball accurately. Ball is corrosion-resistant high carbon stainless steel, precision-ground for tight seating. High carbon stainless steel spring gives positive aid in seating ball.

### Edward Mudwonder Valves

Body and bonnet are high-strength alloy steel with heavy body-bonnet cover flanges. Accurately machined to assure drop-tight sealing under extreme pressures. Double-threaded yoke bushing, completely enclosed, gives 2-to-1 ratio. Corrosion-resistant stainless steel stem with slotted gate coupling to eliminate bending or binding. Gate is hard chrome plated to reduce friction, resist erosion and abrasion. Seat insert of resilient buna-N synthetic rubber, molded integrally over steel wear rings. Seat and gate easily replaced without removing Mudwonder* from line.

### WHERE CAN YOU USE EDWARD VALVES?

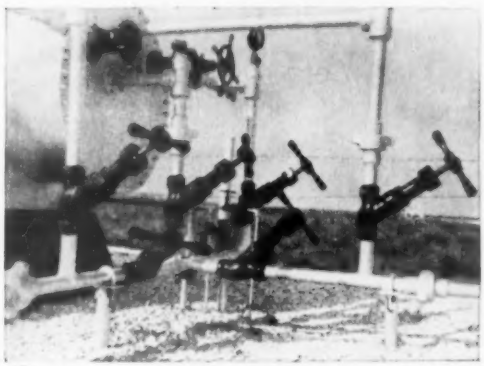
Our customers report complete satisfaction in the use of Edward valves for water flood service . . . throttling . . . on high-pressure heaters, treaters and separators . . . on pressure vessel controls . . . on headers and flow lines to heaters and exchangers . . . for manifold service . . . in gasoline or gas sulfur extraction plants . . . for "unloading" valves at gas compressor stations . . . and in many other applications. You name your need . . . let your Edward representative show how to fulfill it with versatile, economical, completely dependable Edward valves. They are available from your favorite oil field supply store, from your industrial distributor, or direct from *Edward Valves, Inc., 1236 W. 145th Street, East Chicago, Indiana* (Subsidiary of Rockwell Manufacturing Company). Represented in Canada by Lytle Engineering Specialties, Ltd., Montreal, and Rotary Sales & Service, Ltd., Edmonton.

**EDWARD STEEL VALVES**

another fine product by

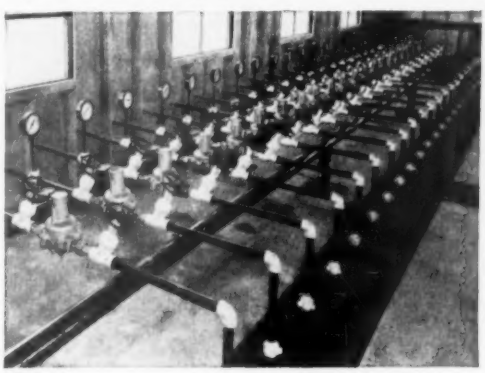
**ROCKWELL**

Edward builds a complete line of forged and cast steel valves from ¼" to 18"; in globe and angle stop, gate, non-return, check, blow-off, stop-check, relief, hydraulic, instrument, gage and special designs; for pressures up to 10,000 lbs; with pressure-seal, bolted, union or welded bonnets; with screwed, welding or flanged ends. *T.M. Reg. U.S. Pat. Off.



Edward 2" Fig. 158 valves in service on heater by-pass lines in Louisiana oil fields. Note Impactor handles for quick, easy closing against high pressures.

Fig. 2698 valves on cooling coils of natural gas cooler. Scene: New Mexico field processing plant. Lubricated plug valves in photo are Rockwell-Nordstrom.



Forty-two Edward forged steel globe valves (Fig. 2698) throttle the flow on this West Texas water flood. Owner reports absolutely no maintenance costs in two years (over 4,000,000 barrels of water)!

DEPT/Transportation & Storage

In Pipelining . . .

In Tanker Operations . . .

# Corrosion Is Losing Some Battles

**New gains on two fronts in oil transportation's perennial battle against corrosion were reported last week** at the annual conference of the National Assn. of Corrosion Engineers, in Chicago.

A good portion of the 90 papers presented at the meeting dealt with the progress being made against corrosion in the oil industry.

**In pipelining, there's new success in using cathodic protection with coated pipe in high-resistivity soil, according to A. W. Peabody, of Ebasco Services, Inc.**

Peabody told the NACE meeting that South Georgia Natural Gas Co. used such a combination successfully when it laid its 400-mi. transmission system in Georgia and Florida recently.

The pipe was coated with coal-tar enamel, reinforced with glass-mat wrapper, and protected with just nine magnesium anodes, buried at 45-mi. intervals.

"Experience with this system," Peabody said, "has indicated that it is entirely practical to cathodically protect a well-coated pipeline system in high-resistivity soil with magnesium anodes.

"Performance is excellent, and is attained with a minimum of operating and maintenance effort."

South Georgia Natural Gas expects the line to be protected anywhere from 20 to 25 years.

**And Southern Pacific Pipe Lines, Inc., says it has developed a method of installing cathodic protection systems in jig time.**

Southern Pacific's D. N. Miller told NACE that his company recently installed a "blitzkrieg" cathodic-protection system because work on the anticorrosion system had to begin as winter approached.

Southern Pacific ran into the trouble just after building its products line across central California and Nevada.

The terrain varied from sea-water marshes to High Sierra granite, Miller said. A few months after the line was put into service, the pipe coating used proved unable to resist corrosion at several points.

Southern Pacific had to get to work on a cathodic protection system because winter floods threatened to break loose over the line's right of way.

With special crews and equipment assembled on an emergency basis, the company installed all the necessary magnesium anodes in time by eliminating all frills and adopting operational short cuts as they arose.

**In tanker corrosion work, the feeling now seems to be stronger than ever that coatings on tank walls are the best anticorrosion measure.**

This feeling has been growing in tanker circles for the past year. At last year's tanker conference of the American Petroleum Institute's Transportation Division, for instance, new coatings were called "a complete bar to tanker corrosion" by one speaker (PW—Jun.13'58,p47).

At the NACE meeting, a paper by J. F. Koehler, of Esso Standard Oil Co.'s marine department, reaffirmed this kind of optimism about the new coatings.

Koehler said that coatings are now the most promising method of reducing corrosion—in both dirty and clean service.

Koehler says that a wide variety of coatings—vinyl, epoxy, and inorganic metal—are now available.

**The advantages of such coatings now seem heavily to outweigh their disadvantages.**

Koehler gives these pros and cons:

Pro: Coatings require little or no attention on the part of the crew; they need little over-all maintenance; contamination by scaling is minimized; tanks can be used for both clean and dirty service.

Con: Effective life span has not really been pinned down; the coatings have high initial cost.

**Widespread use of coatings to prevent tanker corrosion might well have an important bearing on future tanker design.**

If a coating can give full protection against corrosion, the current wastage allowance in tanks (25% to 35%) will be unnecessary. Substantial initial costs could thus be saved.

# What's New / IN TRANSPORTATION

**The "Methane Pioneer" is on its way back to the U.S. for another experimented cargo of liquefied methane gas.**

The "Pioneer" arrived at Canvey Island, in the Thames River near London, late last month to deliver the first transoceanic shipment of liquefied natural gas (PW—Feb.27'59, p11).

The trip, according to the "Pioneer's" owners was "very successful"—meaning that product loss through evaporation was less than 10%, and that there was no apparent deterioration of ship structure.

However, detailed examination of the ship's tanks is not due until the ship reaches the U.S.

•

**Still no new tanker orders for U.S. shipyards.**

The Shipbuilders Council of America last week reported that February was the sixteenth consecutive month without a tanker contract for American yards.

The council says, however, that two tankers were delivered by American yards during the month—a 46,000-tonner for Hercules Tankers, Inc., and a 32,300-tonner for World Wide Tankers.

Last week, Union Oil Co. launched its second 60,000-tonner, the "Lake Palourde."

•

**Shipments and revenues of oil pipelines reporting to the Interstate Commerce Commission dipped in 1958.**

New ICC figures show that total revenues of 69 pipeline companies dropped 0.7% in 1958 to $667-million, from $671-million in 1957.

Movements also dropped: They totaled 4.3-million bbl. last year, compared with 4.5-million bbl. the year before.

•

**Service Pipe Line Co. is about to tie 12 leases in Kress City field, Lafayette County, Ark., into its gathering system.** Completion of the project will give the company a total of 8,543 lease connections in its 15-state operating area.

## Another Giant Barge Is Ready For Work

**The trend to giant-sized barges (PW—Nov.14'58,p96) continues. Back in November, Bethlehem Steel Co. completed and launched the 65,900-bbl. "Ethel H" for use by Hess Terminals, Inc., along the East Coast.**

**Earlier this month, the second such giant, "Barge 18," with a capacity of about 54,700 bbl. (above), was launched by Pacific Coast Engineering Co., Alameda, Calif. "Barge 18" is of all-steel welded construction and has 24 cargo compartments. It will be used on the Pacific Coast.**

IF YOU ARE A PIPELINER

. . . you'll appreciate the time and labor saving features found only in UNIBOLT Scraper Trap and Blowdown Closures, particularly the long-life, self-sealing gasket. For complete details, please write:

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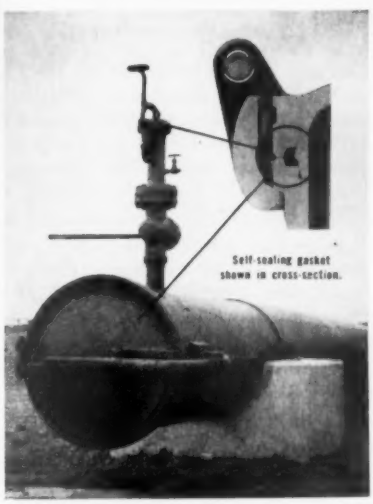
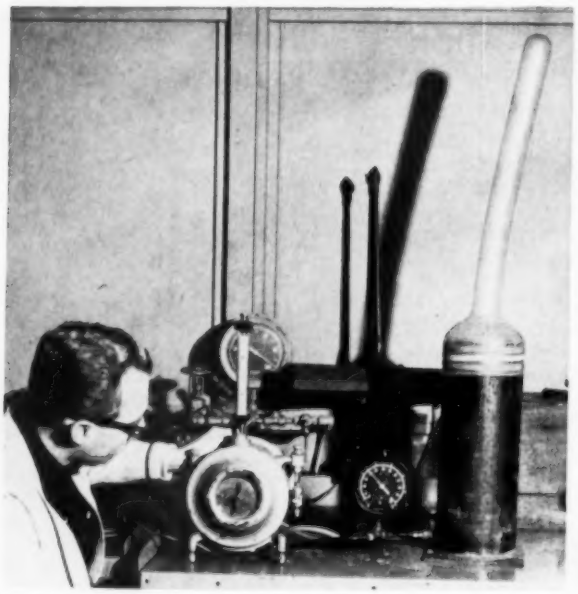
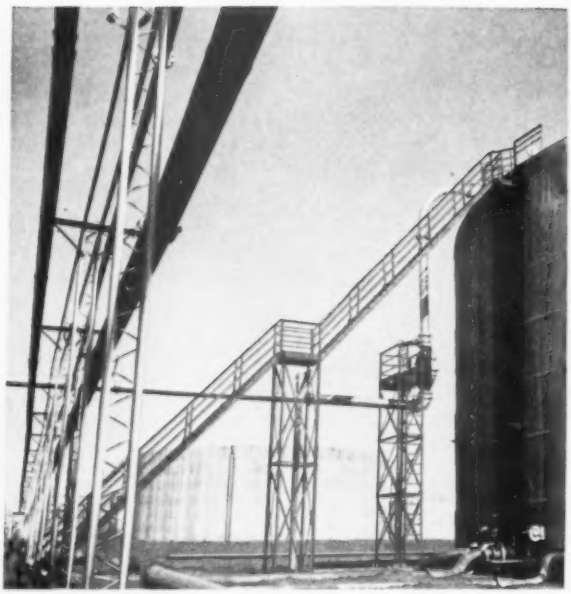




LEAK-DETECTOR for safety valves (shown under test) and . . .



VAPOR-RECOVERY LINES from tanks are ways that . . .

# Humble Cuts Refinery Oil, Gas Losses

**Humble Oil & Refining Co. this week was preparing to install a new visual leak detector for safety valves in its continuing effort to halve refinery losses at its Baytown (Tex.) plant.**

The company has developed a specially constructed polyvinyl plastic tube, which will soon be put over the top of vent stacks on safety valves at various units.

The tubes will be used—on a test basis, initially—to detect leaks that result from faulty or corroded valves.

Escaping gas will fill the plastic tube so that it can be easily seen. According to company engineers, it takes about ½ lb. of pressure to inflate one of these tubes.

One engineer adds that early detection of these leaking valves will reduce hydrocarbon losses into the air and will cut down maintenance costs on "safeties," which can be repaired economically if trouble is detected early.

**In another action in the company's over-all effort to eliminate refinery losses, new oil-water separators are being installed to give added protection against oil losses.**

The separator at Fluid Catalytic Cracking Unit No. 1 is now completed and in operation. Separators at FCCU No. 2 and at the naphtha rerun unit are now under construction. Building of a preseparator on the east trunk sewer near separator No. 10 is scheduled to start shortly.

Company officials say the prime objective of unit separators is to keep oil out of sewers, thus minimizing the possibility of contaminating refinery effluent. They point out that where unit separators are installed, oil losses to the sewer are easily detected by personnel responsible for unit maintenance.

The company estimates that 500 to 1,000 b/d of dry oil are now being recovered in the two existing preseparators upstream from the company's separator No. 10.

Humble officials say at least $5-million has been spent in the past ten years on pollution prevention and loss prevention.

**With the installation of these and other loss prevention devices, Humble hopes to cut its losses down to 0.5% or less of the crude run through the plant.**

The huge Baytown refinery has a rated capacity of 282,000 b/d. However, the plant's crude runs have averaged about 290,000 b/d for the past couple of months.

Humble points out that for accuracy, original loss measurements are not calculated on the basis of volume. "The losses are measured on a counted-weight basis in order to provide accurate measurements," a Humble official explains. "Losses calculated on a volume basis would be inaccurate because the amount of crude entering a refinery will not necessarily equal the amount of products leaving the plant." After the losses are calculated, they are converted to a b/d figure, which can be related to the volume of crude running through the plant.

Humble's losses now total about 0.7%. The company attributes this amount of loss to the fact that it has increased processing rates considerably in the past couple of years without increasing the crude charge. "This always increases your percentage of loss," explains a company engineer.

He adds, "If the company had not done a good job of combating losses during the addition of these new processes, the percentage of losses would have been much higher."

**Such losses, if not checked, can affect the financial picture of a refinery.**

A company spokesman points out —strictly as a hypothetical example— that if a refinery has a 1,000 b/d loss, he can expect his financial loss to be at least $3,000 per day (presuming, of course, that his crude cost $3.00 a bbl. including transportation).

However, a refiner would have to take into consideration the fact that most losses occur when products are either finished or nearly finished, and

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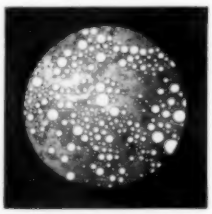
# TRETOLITE FIRST

## WITH FOUR MONEY-SAVING AIDS TO PRODUCERS

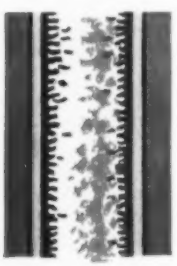
The following four production aids have been field-proved by billions of barrels of treated crude—and have saved producers literally billions of dollars over the years.

### 1. TRET-O-LITE*
*Demulsifiers*



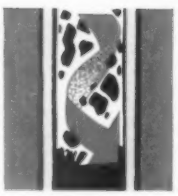
The first chemical demulsifier used in the petroleum industry for the recovery of emulsified crude oil was invented by William S. Barnickel, founder of the Tretolite Company. Since then, TRET-O-LITE demulsifiers have rendered useful millions of barrels of crude oil that might otherwise have been lost. Today, many TRET-O-LITE formulas are available not only for the recovery of emulsified production, but also for salt removal from crude oil, and useful oil salvage from tank bottoms and slop oil systems.

### 2. KONTOL*
*Organic Corrosion Inhibitors*



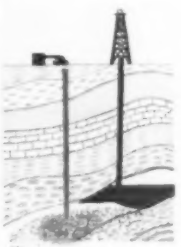
Tretolite Company research and field engineering developed the first organic corrosion inhibitors specifically for petroleum equipment and pioneered their first application. Today, KONTOL Corrosion Inhibitors are used in the production (as well as refinery and pipeline) departments of leading oil companies everywhere.

### 3. SOLVO*
*Paraffin Removers*



Paraffin removers which contain neither carbon bisulfide nor organic chlorinated solvents were first introduced by Tretolite. The harmful effects of chlorides in crude oils on certain refining catalysts have made clear the need for such chloride-free paraffin removers.

### 4. FLUDEX*
*Multi-purpose Water Flood Additives*



Another Tretolite "first", this series of products combines the features of organic corrosion inhibitors, bactericides, scale preventives and wetting agents. Widely used in water-flood operations, FLUDEX additives increase injectivity, and at the same time, mitigate problems arising from corrosion, bacteria and scale. They are also being effectively applied for backwashing water-flood filters, water clarification, and stimulating production in stripper wells.

Because Tretolite has developed and pioneered the application of these products, this organization can offer you a brand of experience and service in the manufacture, use and know-how of these products that's unequalled anywhere else in the industry.

For further information on how these and other money-saving Tretolite aids can fit into *your* operation, *ask the Man in the Red Car*—your own Tretolite Field Service Engineer.

*TRET-O-LITE, KONTOL, SOLVO and FLUDEX *are registered trade-marks of Petrolite Corporation.*

TFS3-1

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so he would have to add in the operating expenses. A Humble official estimates that the cost of a 1,000 b/d loss might total $4,000 per day.

**One Humble source adds that refinery losses used to run as high as 5%. Now, "any time the loss in a modern refinery gets as high as 1% someone is going to be very unhappy."**

"We don't know what the optimum goal in a plant should be on losses. However, we think it should probably be somewhere in the range of 0.2% to 0.5%," he says.

**The company has already reduced the losses to a great extent in several areas by using preventive measures.**

For instance, losses due to breaks in lines are not experienced too often. The reason is that Humble has installed cathodic protection, which prevents corrosion to a large extent, thus allowing fewer line leaks. Also, the company runs periodic pressure tests.

Formerly, storage tanks were the source of a great deal of evaporation. However, nearly all of the company's tanks now have either vapor recovery units or floating roofs to reduce this problem.

The company also has measuring devices to check the amount of hydrocarbons coming out of the flare system.

**A program initiated several years ago to check safety valves has brought about a reduction in losses caused by leakage through these valves.**

Two years ago Humble checked a total of 2,500 safety valves in the plant. It found that some of the valves leaked as much as 10 b/d.

As a result it overhauled its method of testing safety valves, and improved its technique of approving new valves.

Other standards were set up also. For instance, it was decided that any valve that leaked as much as 5 b/d "was a bad leaker."

Once each month safety valves are checked for leaks. All reworked valves are thoroughly cleaned and tested before being put back into action. And all new valves are given a bubble test. The company insists on "absolute jam-up" valves, with no bubbles escaping during such tests.

As a result of these efforts, Humble has had some valves in operation for as long as 18 months with no leaks.

**Much of the credit for the loss-prevention work goes to a special committee composed of representatives of the various branches of the plant.**

This group, called the Refinery Loss Prevention Committee, is continuously working on ideas of loss-prevention, as well as on methods of checking losses from any source.

The committee is composed of 15 members, who represent the various segments of the refinery. This committee meets once each month to discuss its findings.

One committeeman says the group sets its goals a little steeper each year —so they will be harder to reach, "but not impossible to reach."

Humble has two employees—called loss coordinators—who are in charge of checking on the loss situation. These two men check daily for losses throughout the plant.

**The loss prevention group has developed a list of check points it uses to determine where losses are likely to occur.**

Some of the likely spots: evaporation from naphtha and crude storage tanks; evaporation from oil-water separators; flaring for emergency and for clearing equipment; filling tank cars and trucks; evaporation in storm sewers; oil in spent acid from treating operations; oil in effluent water; evaporation from pump leakage; leakage from glands on compressors; hydrocarbons in spent clay from lube oil treating; oil in BS&W from tank bottoms; asphalt oxidation; condenser leaks, uncondensed hydrocarbons in steam jets on pipe-still vacuum towers; hydrocarbons in flue gas from catalytic cracking catalyst regenerator; line breaks and leaks; safety valve leakage; stuffing boxes on valves and gasket leaks; and evaporation from samples.

**Humble realizes the fight isn't completely won, however. The trend toward the manufacture of light ends is creating new problems for refinery management.**

Some company personnel are convinced that some of the lighter materials that Humble now produces evaporate without detection.

"Any refinery with a preponderance of high-pressure, light-ends material is going to have some loss," explains one official. "For the most part we can account for about 60% of all of our losses.

"Modernization gives greater returns of course. But, at the same time, it causes new problems and losses with each new unit. Right now, for example, we are trying to get new processes designed so the safety valves will be at the lowest possible level so the operator can check them.

"Today there is not only the challenge to find losses," says this spokesman. "To stop the loss is an even greater challenge."


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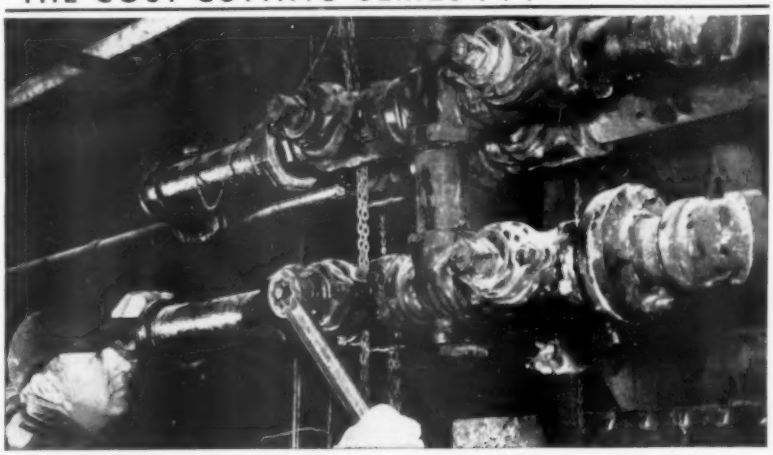

**LUBRICATED plug valves cut errors**

Valving errors are almost always costly and often dangerous to human life and plant investment. A proven way to stop these errors is specifying Rockwell-Nordstrom lubricated plug valves like the ones shown above on asphalt lines. Since they close with a ¼-turn, the operator doesn't have to guess or "feel" handwheel tension to be sure of closure. And on gear or power operation, the smooth, lubricated ¼ operation means closure two to five times faster than ordinary valves. Additional benefits of Rockwell-Nordstrom valves: they're lubricant sealed for really positive shut-off and lubrication practically eliminates wear for longer valve life at lower cost. Write for details:

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# Lion's Modernization: Top to Bottom

**Few refinery modernization programs match the thoroughness of the one now in progress at the El Dorado (Ark.) plant of Lion Oil Co.,** a division of Monsanto Chemical Co.

"Modernization"—bringing equipment up to date with the demands now coming to bear on it—is getting special emphasis these days at refineries around the country (PW—Nov.7 '58,p54).

Lion, however, is going a good bit further than most processors in modernizing:

**Lion's main modernization effort is being directed toward improving product quality.**

**A new 5,000 b/d Platformer-Unifiner,** which will help Lion meet the gasoline octane challenge in the years ahead, was put on stream in September. The unit was built by Procon, Inc., of Des Plaines, Ill.

**A new 5,000 b/d distillate hydrodesulfurization unit,** which improves cetane number and gravity of diesel fuel and burner oils, was put on stream last month. Procon built this unit, too.

**A new 5,000 b/d propane deasphalter** to increase the yield of paving-grade asphalts is now being built by Badger Mfg. Co. This unit is expected to go on stream some time this summer.

**A new propylene tetramer unit** is also under construction. Procon, which is building this unit, is also handling the revamping of the plant's vapor recovery system, which will furnish feed for the tetramer and old alkylation units.

The recovery system will feed these units with gases from other processing units.

**Lion is also working hard to bring its plant hardware up to date.**

The control of three refinery units is being centralized in one control room. As a result, Lion is going to rely much more heavily on electronic instrumentation.

The control room, formerly serving only the plant's cat cracker, will also direct the new hydrodesulfurization and tetramer units.

Other control rooms at the plant are also being enlarged to direct the plant's additional new units.

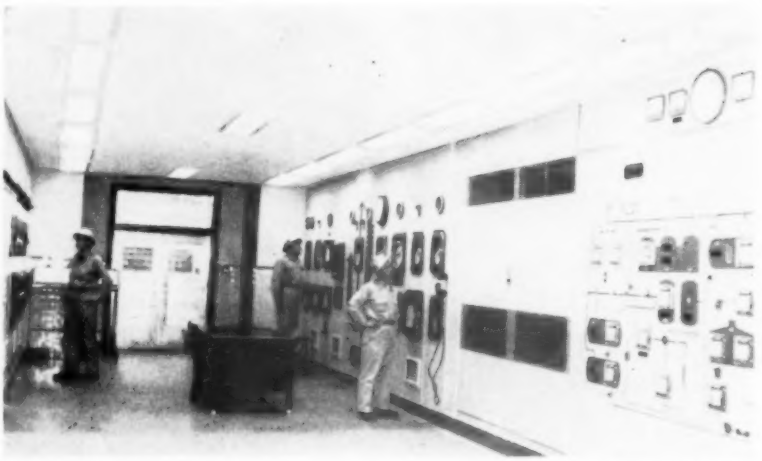
Lion is also adding a 100,000 lb.-per-hour high-pressure steam boiler to help it meet its heating requirements.

And a new 14,000-gal.-per-minute cooling tower is on the way at the El Dorado plant.

The company is also increasing its storage capacity by some 250,000 bbl.

And it plans "extensive improvement" in its electrical system.

**NEW CAT REFORMER,** a 5,000 b/d unit just put on stream last fall, and . . .



**ENLARGED CONTROL ROOM** are two of many projects under way at Lion Oil's plant.

**Other improvements have just been made at the El Dorado plant's control laboratory.**

Lion has just finished installing gas chromatographs for more-automatic analysis of product streams. Lion control specialists figure the new chromatographic analysis equipment will reduce the time required for such work from three to four hours to about 20 minutes.

**To top it all off, the company is also increasing the plant's crude capacity.**

By early next year, the refinery will have a rated capacity of 33,000 b/d. It now can handle up to 29,000 b/d.

# What's New / IN PROCESSING

**Imperial Oil Ltd. will build an alkylation plant as part of a $2.4-million expansion at its 28,500-b/d Edmonton (Alta.) refinery.**

Tenders for construction have been called for, and the current schedule calls for construction to start by September, and the plant to be in operation by April, 1960.

Output from the unit will be 1,500 b/d. Feedstock will include propylene, butylene, and isobutane from the refinery and from Imperial's gas conservation plants at Leduc and Redwater, among others.

•

**General Petroleum Co. will install a delayed coker at its Torrance (Calif.) refinery.**

The new unit has a planned capacity of 9,300 b/d of heavy oils. This will increase the refinery's total coking capacity to 35,000 b/d. The unit is scheduled for completion in the first quarter of 1960. The cost will be about $4.5-million. Work will begin soon by the contractor, Bechtel Corp.

General Petroleum says the new unit will be particularly useful to the company because much of its crude supply is low-gravity oil.

•

**Pacific Petroleums, Ltd., is beginning a broad expansion program for its processing plants in northern British Columbia, at Taylor and Dawson Creek.**

The project will include the enlargement of the McMahon natural gas liquids recovery plant at Taylor, and an increase in asphalt-making capacity at Dawson Creek.

Pacific has also just concluded a deal giving Phillips Petroleum Co. operation of refineries and marketing of products in central B.C., the Peace River area, Yukon Territory, and the Northwest Territories. This will allow Pacific to concentrate on expansion of exploration and production on its extensive holdings in northern B.C.

•

**A contract has been let for the delayed coker and gas-recovery plant to be built for Coastal Products Co. at Suntide Refining Co.'s Corpus Christi (Tex.) refinery.**

The Refinery Engineering Co., of Tulsa, will handle all phases from design through construction. The coker will run on two different charge stocks, with a daily capacity of 221 tons of coke on one type and 326 tons on the other. At full capacity, it will charge 7,000 b/d of reduced crude.

Products other than coke will be handled by Suntide, which owns Coastal Products jointly with D-X Sunray Oil Co.

•

**U.S. Industrial Chemicals Co. already has plans to double the capacity of its polyethylene plant at Houston, which just started production.**

The present plant has a capacity of 75-million lb. a year of high-pressure polyethylene. The expansion plans, with completion scheduled by the third quarter of 1960, will increase the plant's capacity to 150-million lb. a year.

U.S.I. also produces about 100-million lb. a year of polyethylene at its Tuscola (Ill.) plant, making a total current production of 175-million lb. a year and an ultimate production of 250-million lb. a year by next year.

•

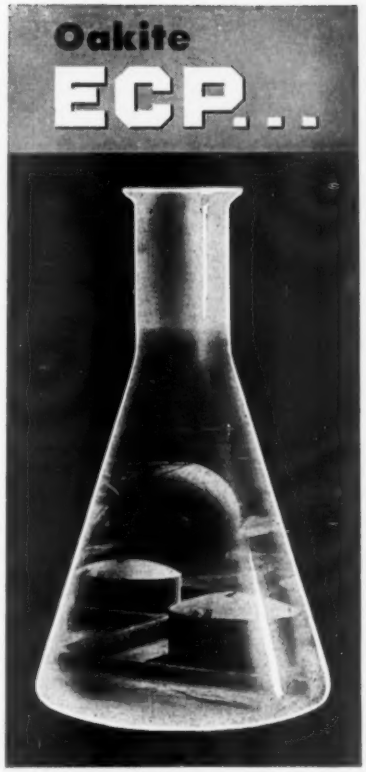
**Wulff Process Co. has purchased Koppers Co.'s rights to the production of acetylene and ethylene under the Hasche process patents.**

Also, agreements have been signed covering engineering and construction of Wulff plants throughout the world by The Lummus Co., Koppers Co., and Fluor Corp., Ltd. These agreements bring together important improvements, in the basic Wulff process, developed by Lummus, Fluor, Koppers, and Wulff, so that Wulff process licensees may take advantage of them all.

•

**Heyden Newport Chemical Corp. reports that it has developed a new synthetic lubricant for high-temperature turbojet engine use.**

The company anticipates that its lubricant (including a company-developed antioxidant additive) will serve as one of a very limited number of prototypes for procurement of high-temperature jet-engine oils meeting U.S.A.F. Target Specification MIL-L-9236A.


**Best way to clean a storage tank**

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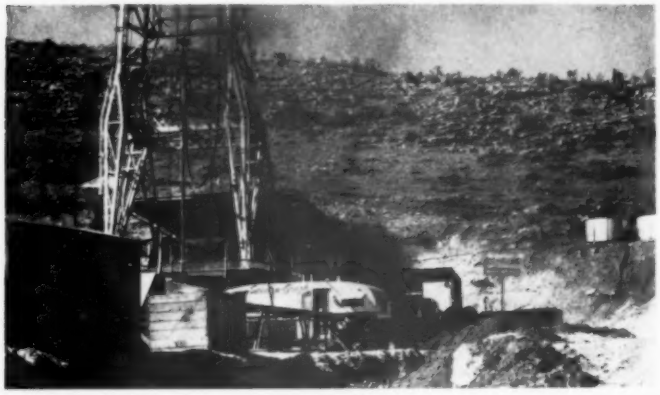
KAHTA—first oil find by a U.S. firm in Turkey.

TURKISH NATIONALS help make up many of the wildcat drilling crews.

DISTRICT DIVISIONS under Turkey's 1955 oil law.



MORE WILDCATS are slated for this southeastern area of Turkey.

# Turkey Oil Find Spurs More Wildcatting

**Oil operators in Turkey are pepping up their exploration and drilling programs in the wake of the first significant oil find on the new licenses granted since 1955.**

Some 230 licenses, covering over 26.5-million acres, have been awarded since Turkey's new oil law went into effect in March of that year. The law was designed to stimulate the search for new oil outside of the small producing area in southeast Turkey.

**Seven foreign companies, six of them American, are now actively engaged in drilling programs, with another U.S. firm slated to start wildcatting before the year is out.**

These companies have drilled 16 wildcats, 13 of which were abandoned as dry. Five of the dry holes were drilled in District I (Thrace), in the northwest corner of Turkey (map); five in District V, in the southeast; two in District VI, in south-central Turkey; and one in District VII in central Turkey.

**The first success was chalked up by American Overseas Petroleum, which has now found heavy oil in three of its four tests at Kahta,** in District VI.

The Caltex associate found 10-11-gravity asphaltic crude on its first two Kahta tests last year, between 3,500-600 ft., in cretaceous limestone (PW—Oct.17'58,p50). A similar crude was found in No. 3 Kahta, located 1.6 mi. west of No. 1, at 3,935-50 ft. All three wells reportedly have a producing potential of 400 to 500 b/d on pump, although no prolonged tests have yet been made.

The Kahta Cayi structure is located about 17 mi. southeast of the town of Adiyaman. The site is about 70 mi. northeast of No. 1 Aril, Amoscas' first wildcat, which was abandoned in 1957 at 10,153 ft. after encountering some solid asphalt.

International Brown Drilling Co., of Los Angeles, the drilling contractor, recently abandoned No. 4 Kahta, located about 1¼ mi. east of No. 2, at 4,090 ft.

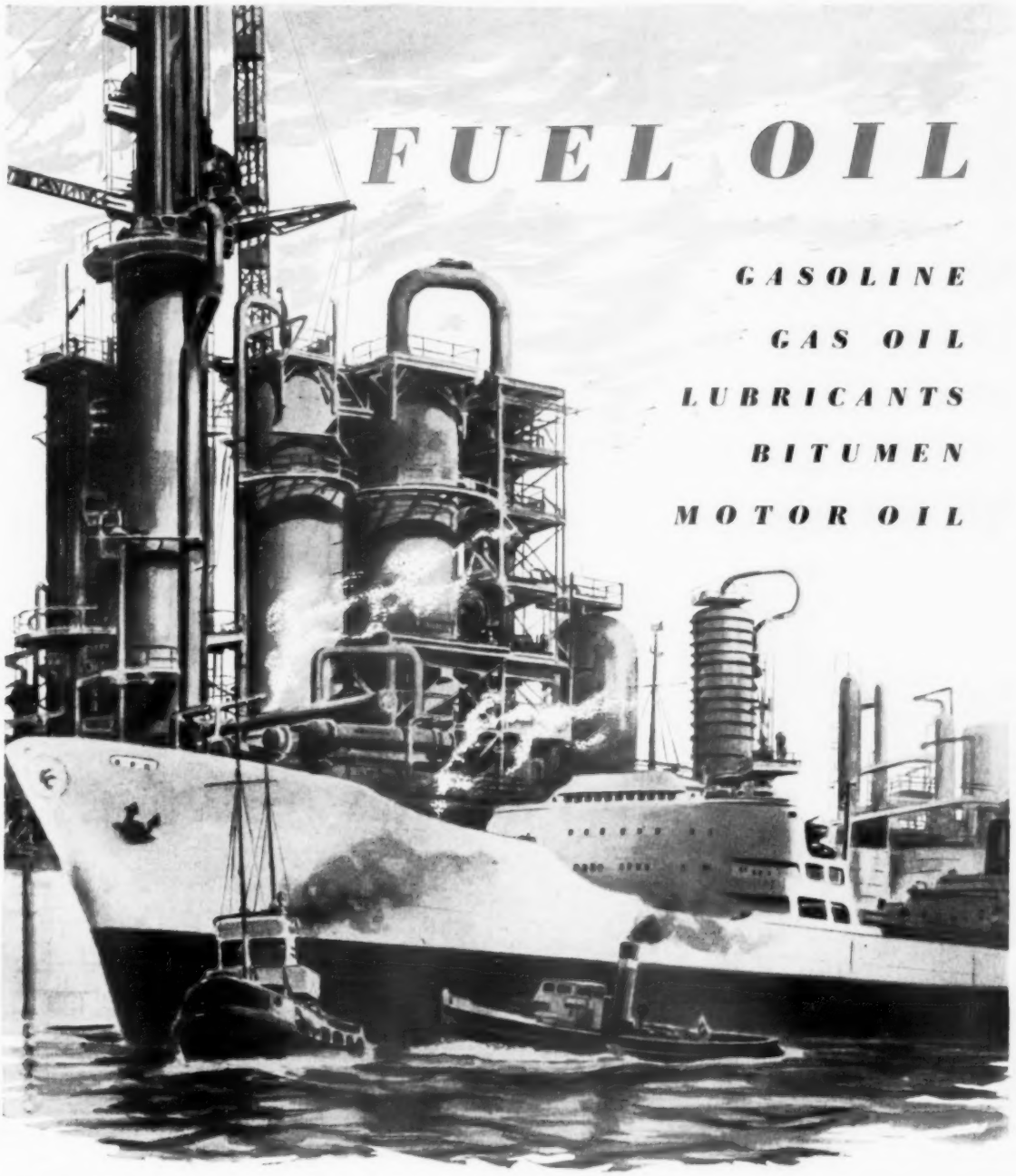
**Amoseas is now doing further drilling in the area to evaluate the commercial possibilities of the finds.**

The company's sixth test, the No. 1 Sahabe, located 2 mi. southwest of No. 3 Kahta, is currently being drilled below 2,300 ft.

**Here's what other companies are currently doing on their wildcatting programs:**

**Esso Standard (Turkey), Inc., is now below 8,700 ft. on its fifth wildcat**—the No. 1 Kastel, in District V. The company recently abandoned its first test in District V, the No. 1 Gereus, at 6,766 ft. Drilling & Exploration Co., Dallas, is the contractor.

Esso started its wildcatting in Turkey in April, 1957, with the first of three wildcats in Thrace. They were abandoned at depths ranging from 4,342 ft. to 10,839 ft. A small amount of noncommercial oil was found in

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one of them—the No. 1 Osmancik.

**Mobil Exploration Mediterranean, Inc., is drilling below 7,000 ft. in its first wildcat,** No. 1 Kuransa, in District VII. The Socony subsidiary holds almost 4-million acres, and has done seismic work in Districts V, VI, and VII. Some geological and fieldwork has also been done in District II. Seacat Drilling, a U.S.-Lebanese firm, is the contractor, using an Oilwell 96 rig.

**Tidewater Oil Co., now nearing scheduled depth in its second test, plans to spud its third wildcat this summer** in the same general area as its other two.

The company is now below 9,200 ft. on No. 1 Ebyat, near the Syrian border in southeast Turkey where it holds some 3.6-million acres equally with Texaco-Seaboard and Atlantic Refining Co. The wildcat is about 50 mi. northeast of Nuysaybin.

The company's first test, No. 1 Bakuk, located 40 mi. southeast of Mardin and 30 mi. west of Ebyat, was abandoned at 12,506 ft. in the Upper Cambrian.

International Brown Drilling Co. is contractor, using Tidewater's Emsco A-800 rig.

**Royal Dutch Shell has just abandoned its second wildcat in Thrace,** and reportedly will move its National 80-b rig into District VI to spud its third test.

The company carried its No. 1 Kendamis to 12,040 ft. Its first test, No. 1 Terzili, near the town of Babaeski, was also abandoned below 12,000 ft.

The contractor is Kier & Cawdor Arrow Drilling Co., Ltd.

**Bolsa Chica Oil Corp., Los Angeles, is slated to resume drilling in its second test next month,** in District V. No. 1 Hazro was suspended last December at 4,050 ft. because of snow and heavy rains. The test will be carried to at least 6,000 ft., under a dry hole agreement with Esso, Shell, and Socony—all of which have contiguous acreage.

The Bethlehem M-58 rig had been trucked 60 mi. (30 air miles) eastward to the Hazro site from the company's first test, No. 1 Zengilan, which was abandoned last fall at 6,449 ft. Bolsa Chica has slated a third test—the No. 1 Silvan—farther east in District V.

**Turkish-American Oil Co., operator for Gilliland Oil Corp., Los Angeles, is going to make another stab at finding oil in the Iskenderun area** of District VII, after drilling two dry holes in District V near the Turkey-Iraq-Syria border—the Nos. 1 and 2 Rubai.

No. 1 Rubai, located about 17 mi. southeast of Cizre, was abandoned at 7,665 ft. with junk in the hole in June, 1958, after having been suspended because of rain. The rig was skidded 50 ft., and No. 2 was spudded. It was eventually abandoned at 10,200 ft.

This is the rig the company now plans to move back to Iskenderun, where the company had previously abandoned a dry hole at 5,942 ft. because of technical difficulties. That test was directionally drilled under some offshore acreage by Drilling & Exploration Co. Turkish-American, owned by four Los Angeles businessmen, plans to drill the next test itself.

**Gulf Oil Corp., which has been expanding its holdings in Turkey, will drill its first wildcat before the end of the year,** probably in District I. Several geological parties are now at work, and some air magnotometer work is slated to get under way.

In addition to its own holdings, Gulf has a 75% interest in the acreage of D. D. Feldman Oil & Gas, Los Angeles. It also recently took over acreage from Istanbul Tabii Gaz, Ltd., an affiliate of Ralph M. Parsons Co., Los Angeles. Tabii retained a minority interest, and subsequently acquired some new acreage on its own.

**Several other companies, including U.S. and German firms, are in various stages of preliminary exploration.**

Pan American Land & Oil Royalty, of Dallas, has one geological survey under way on its 915,000 acres, acquired early this year. Another geological party is due in May.

Marmara Petroleum Corp., a Husky Oil Co. affiliate, has done some gravity and seismic work on its 454,400 acres.

Two German independents—Deilmann Montan and Deutsche Erdoel—have done seismic work in Districts I and V, respectively.

**A third small oil field was discovered last year in southeast Turkey, near the present producing area, by the government's Turkish Petroleum Co.** It may prove to be an extension of Garzan, one of the two existing fields in the area.

TPC reports that in mid-1958 it discovered its third field, at Germik, some 1½ mi. northwest of the northernmost producing well on the Garzan structure. Garzan and TPC's other field, Raman, in Siirt, District V, produced 5,600 b/d last year, with some wells shut in. This just about equalled the capacity of the company's small local refinery.

TPC recently abandoned its Kentalin wildcat, east of Garzan, at 6,587 ft.

# Socal Tests New Deep Oil Pool

**Standard of California's Venezuelan subsidiary is now drilling the first well to confirm its wildcat discovery of 30-gravity oil in a deep pool 33 mi. southwest of the Boscan field.**

The new test, No. 33H-1 Zulia, is located north of the No. 36E-2 Zulia wildcat discovery, brought in late last year by Richmond Exploration Co. in the Maracaibo Basin, west of Lake Maracaibo.

The discovery well found production in Cretaceous limestone within the over-all interval from 15,373-990 ft. Total depth was 16,236 ft.

In an initial two-week production test, a rate of 1,000 b/d was indicated. The latest test rate was 2,000 b/d before the well was shut in.

**The oil find is significant on more than one count. For one thing, the discovery well is the deepest in Venezuela capable of production.**

Further, its location is over 40 mi. from the nearest field producing from the same geologic formation.

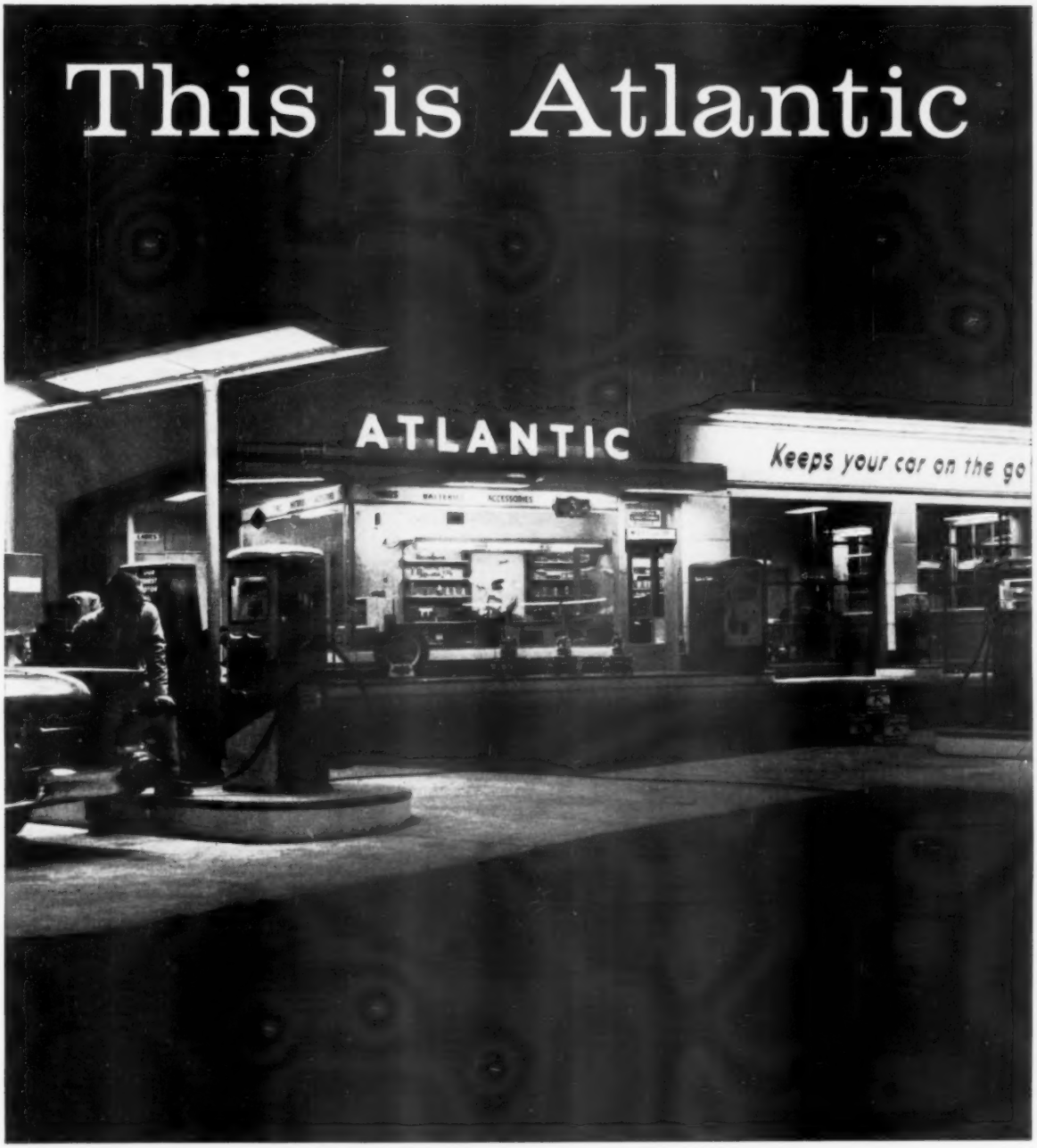
**In addition, the discovery may lead to development of Socal's first relatively-high-gravity oil field in Venezuela.**

Its 50,000-acre Boscan field to the northeast produces an asphaltic-type specialty crude averaging 10.5-gravity. Production there was cut 18% below the 1957 peak last year, to 75,200 b/d, due to reduced market demand.

## Mideast Oil Output Shows Slight Gain

**Oil output in key Middle East producing states remained at record levels in February, showing a slight gain to 4,259,500 b/d.** The totals, in 000 b/d:

| | Feb. '59 | Feb. '58 | Jan. '59 |
|---|---|---|---|
| Kuwait | 1,342.3 | 1,341.0 | 1,404.2 |
| S. Arabia | 1,112.0 | 1,063.0 | 994.0 |
| Iran | 825.0 | 763.0 | 829.0 |
| Iraq | 803.8 | 602.1 | 806.6 |
| Qatar | 176.4 | 163.1 | 167.0 |
| Total | 4,259.5 | 3,932.2 | 4,200.8 |
| 2-Mo. Avg. | 4,228.6 | 3,919.1 | |




**MARKETING:** Available to the man at this pump is Atlantic's 88 years of marketing experience, and solidly behind him are factors that help produce retail success—quality products, thorough dealer training, sound financial counseling, modern service station facilities.

ATLANTIC

**THE ATLANTIC REFINING COMPANY**

***Producer, refiner and marketer of quality petroleum products***

# What's New / AROUND THE WORLD

## IPC Boosts Plans For New Oil Capacity

**IRAQ—Iraq Petroleum Co. is planning for still another expansion, which would bring its oil export capacity to 1.4-million b/d, compared to the 1,140,000 b/d scheduled by the end of 1961.** Output is already at record levels, above 800,000 b/d.

The later boost would be made in northern Iraq, where IPC hopes to bring capacity to 960,000 b/d. Whether this is technically feasible will be determined while producing capacity is being brought up to the 700,000 b/d planned for 1961.

The internationally owned company is already preparing plans to boost capacity of its Mediterranean pipeline system to 960,000 b/d, it disclosed in a current review of operations.

Under the program that IPC expects to complete in 1961, producing and export capacity of the southern fields also is being jumped dramatically—from the present 240,000 b/d to 440,000 b/d.

•

**FRANCE—The OEEC Oil Committee is now studying the proposals for shipment of Sahara gas to Europe**—either direct by pipeline or by methane tanker.

A special working group set up to report on the proposals (PW—Nov. 7'58,p107), met last week for the first time, and will meet again in June. The plan would be financed by an international company made up of governments and private interests.

•

**SWITZERLAND — A Swiss-Italian company has been formed to build the 40,000 b/d refinery at Aigle,** which will be fed by a pipeline from Genoa.

The new Soc. des Raffineries du Rhone S.A., capitalized at $1.4-million, has been set up at Lausanne. It is owned ⅔ by Soc. Financiere Italo-Suisse, and ⅓ by Italy's state-owned Ente Nazionale Idrocarburi. These proportions are reversed in the pipeline company, recently set up in Italy (PW—Mar.20'59,p77).

•

**SICILY—The LeTourneau offshore drilling platform originally purchased for the Italian venture in the Persian Gulf has been diverted to Sicily.** It is now set up for Sicily's first offshore test 1¼ mi. off the Gela coast, on acreage held by Italy's state-owned ENI group.

A change of plans diverted the triangular platform, after it left the U.S. on what was to be a 10,000-mi. tow to ENI's offshore block in Iran (PW—Dec.5'58,p61). It is equipped for drilling to 10,500 ft. and will operate in conjunction with a 5,000-ton tender.

•

**INDONESIA — Authoritative details of a new draft petroleum and mining bill approved by the Cabinet have not yet been made available,** industry circles say, although press references to it have been frequent in recent weeks.

The legislation is due to come up for debate in the next session of Parliament, in about a month. Oil circles tend to discount Far East reports that the bill will require local refining of all oil produced in Indonesia.

•

**VENEZUELA—Sun Oil Co. expects to triple production on Lake Maracaibo Block I by September, to 100,000 b/d,** after a permanent flow station and an 18-in. pipeline to the Punta de Palmas terminal are installed and tested.

Output is now averaging around 32,000 b/d on the mid-lake block, a new concession held 45% each by Venezuelan Sun and Atlantic, and 10% by Texaco Seaboard.

•

**USSR—The Soviets are reportedly planning a large oil harbor on the Baltic Sea in Lithuania, at Memel, for crude exports to Scandinavia.** Soviet exports are now shipped via the Black Sea.

Crude pipelines to Baltic harbors are said to be under construction.

•

**YUGOSLAVIA—Crude output last year climbed 17% to total 9,240 b/d,** according to an official report on development released last week.

•

**VENEZUELA—The five-company Paria Operations, Inc., group is setting up its multiple-well platform for development drilling in the Gulf of Paria,** after getting the government's green light for the installation.

As originally planned, the platform would permit drilling of 27 wells from a single location near the wildcat discovery well brought in a year ago on 151,450 acres of new offshore concessions. Continental Oil, Texaco, and Ohio Oil each have 25% interest, Cities Service 16⅔%, and Richfield 8⅓%.

•

**LIBYA—Shell has an "encouraging" oil find in a wildcat 120 mi. southwest of Tripoli.** The company this week said that additional drilling will be needed at Bir Tlacsin to assess the value of the discovery. It reportedly flowed at a 1,000 b/d rate on a short open-hole test.

•

**MEXICO—The latest U.S. financing for Pemex pipelines is a $6½-million deal between two U.S. banks and Tubos de Acero de Mexico S.A.** The latter will supply 10¾-in. seamless steel pipe for a 214-mi. product line between Monterrey and Torreon (PW—Mar.20'59,p10).

The financing is being extended by Guaranty Trust Co. of New York and Continental Illinois National Bank & Trust Co. of Chicago, for a period "somewhat in excess of five years," according to an announcement in New York this week.

## Venezuela's Aim: Oil Ties With Arabs

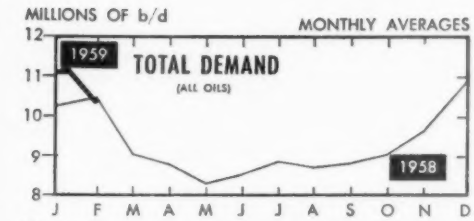
**Venezuela's President Romulo Betancourt foresees "new and dynamic relations" with Arab nations needed to permit joint action in international oil policies.**

Venezuela and the Middle East, the president said last week, have a common interest in maintaining oil sales in the international market at a fair price.

The Venezuelan legation in Cairo is being raised to embassy status. Venezuela is also expected to establish diplomatic missions in Iraq and Saudi Arabia, as well as non-Arab Iran.

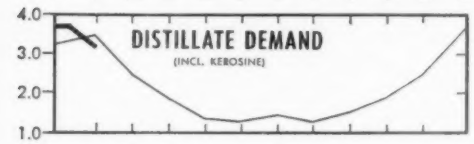
PETROLEUM WEEK'S

# Fingertip Figures



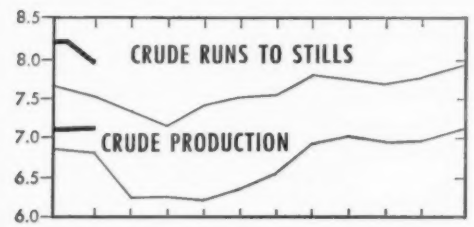

TOTAL DEMAND

| | |
|---|---|
| Latest 4-week average | 10.139 |
| Year ago | 9.795 |




DISTILLATE DEMAND

| | |
|---|---|
| Latest 4-week average | 2.758 |
| Year ago | 2.828 |

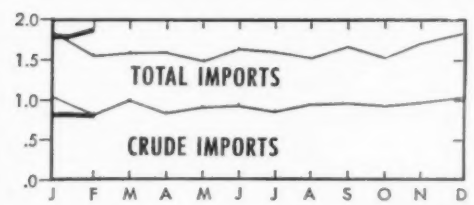



RUNS TO STILLS

| | |
|---|---|
| Latest week | 8.082 |
| Previous week | 8.283 |
| Year ago | 7.316 |

CRUDE PRODUCTION

| | |
|---|---|
| Latest week | 7.203 |
| Previous week | 7.127 |
| Year ago | 6.263 |

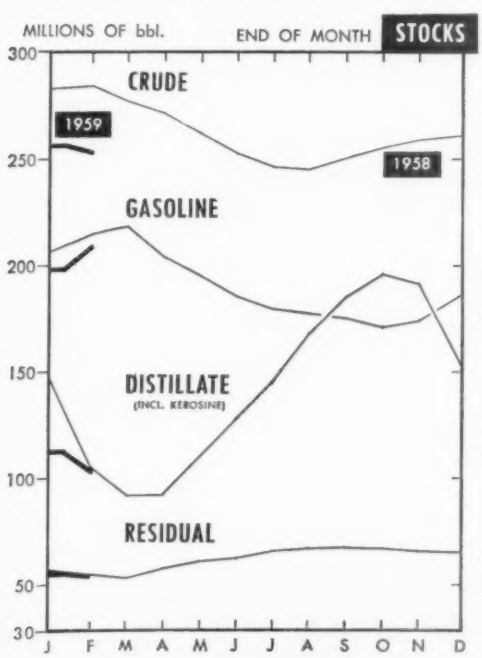



TOTAL IMPORTS

| | |
|---|---|
| Latest week | 1.932 |
| Previous week | 1.738 |
| Year ago | 1.568 |

CRUDE IMPORTS

| | |
|---|---|
| Latest week | 1.046 |
| Previous week | .805 |
| Year ago | 1.020 |




CRUDE STOCKS

| | |
|---|---|
| Week-ended 3-14 | 255.7 |
| Previous week | 256.0 |
| Year ago | 283.8 |

GASOLINE

| | |
|---|---|
| Latest week | 212.1 |
| Previous week | 210.3 |
| Year ago | 216.9 |

DISTILLATES

| | |
|---|---|
| Latest week | 95.5 |
| Previous week | 97.9 |
| Year ago | 95.6 |

RESIDUAL

| | |
|---|---|
| Latest week | 55.1 |
| Previous week | 55.0 |
| Year ago | 55.0 |

**While the total refinery runs in the U.S. are at a level that seriously risks an oversupply of products, the finger of blame can't be pointed at all refiners.**

Nationwide, refiners in the past four weeks have operated at 85% of capacity, with throughput averaging 8.2-million b/d.

But there are some large differences in the percentages of capacity operated in the various areas of the country.

**Surprisingly, the highest percentage of runs to capacity are by refiners in the mid-U.S.—not the East Coast refiners who run the largest proportion of imported oil.**

East Coast refiners—those in District I—are operating at just slightly over 80% of capacity, with current runs of just under 1.3-million b/d.

But in the Midwest (District II), refiners are operating at throughput rates averaging 88%. In some parts of the district, operations are above 90%.

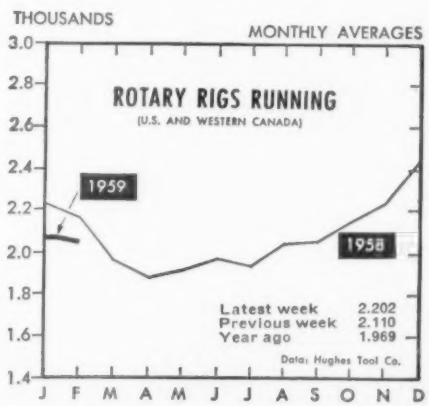
Refiners in the Oklahoma-Kansas-Missouri section are running at about 94% of rated capacity. And in the Ohio-Michigan portion, runs are at 95% of rated capacity.

**Southwestern and Gulf Coast refineries are operating at 85% of capacity, though Louisiana Coastal plants are running at close to 95%.**

In the Inland Texas part of District III, refiners are "loafing" along at a bare 75% of capacity. And plants in the North Louisiana and Arkansas portion of the district are also operating at close to the 75% of capacity level.

**On the West Coast, refineries haven't averaged as high as 75% of capacity in all of 1959.**

The West Coast plants have been as low as 70% of capacity in several weeks.



# The Market Trend

## Not Everybody's Happy About Oil Controls

**There's a lot of grousing about the controls on imports.** Most of the complaints come from seaboard refiners, heavy-oil importers, and shipowners.

**Seaboard refiners take the view that their properties have been arbitrarily devalued.** Their argument generally runs that they are penalized because they took the initiative to enter the foreign market when tanker charters were stronger, and therefore riskier to a far-off buyer.

**Heavy-oil importers aren't happy, either, because their importing histories in 1957 (the base year) vary so widely.** Based on private studies of 1957 importing records, some majors may get only 800 b/d of heavy oil allocation. Some independents may get as much as 55,000 b/d.

**U.S.-flag shipowners feel they may get some benefits from the allocations orders.** But they are not entirely sure. Their principal complaint is that the majors resist laying up tankers that now operate uneconomically —to keep their unions happy.

**Caribbean refiners, in particular, chafe at the idea of allocations on residual fuel oil.** Natural gas, they say—and not coal, as intended—will pick up any fuel business left uncovered by import curbs. And what will happen, they ask, to new customers recruited since 1957 (the base period) who now are building storage to handle cargo lots?

**There is a lot of confusion on prices, too.** Increases are widely anticipated in heavy-fuel prices in the East on or soon after Apr. 1, the date for the start of residual quotas. On the other hand, several big New York retailers last week cut their retail prices by 14.5¢ a bbl.

**But one thing is certain: The flurry of spot cargoes from the Caribbean has ended.** The break-point for shipments to California came around the 18th of the month. For the East Coast, last "free" boatloads cleared the Caribbean about the 22nd.

**From here on out, the new order begins.**

**Cargo Under The Wire:**

One of the last spot cargoes of products to leave the Caribbean before controls was a 32,000-ton cargo of No. 2 fuel. No price was mentioned, but it was probably low. New York harbor No. 2 fuel prices are getting wobbly, and spring is in the air.

**Price Cuts For Propane:**

Phillips Petroleum announced a 1¢ discount on its prices for propane in the Midwest, Mid-Continent, and Northeast. At some East Coast and Southeast points, the discount ranged from 0.5¢ to 0.75¢.

Earlier this month, an independent offered 500 cars of propane at 4¢, Group 3, which was, at the time, 1.5¢ below contract price levels.

**'Gas' Is Up In the West:**

Continental Oil has increased its gasoline prices for tank wagon deliveries by 0.5¢ a gal. in Colorado, New Mexico, Wyoming, and Montana. The move follows increases made by other companies in the Upper Midwest.

The company says the advances stemmed from efforts to recover, at least partially, increased product costs and general wage hikes.

# The Market Place AROUND THE WORLD

Prices compiled for PETROLEUM WEEK by Platt's OILGRAM Price Service and National Petroleum News, McGraw-Hill Publications

**All prices as of March 23**

**Bold face type indicates changes from previous week**

## KEY PRICES—REFINED PRODUCTS

(¢ per gal. except dollars per bbl. where $ is shown)

### Western Hemisphere

**U. S. Gulf Coast, cargoes**
- Gasoline, 98 oct prem ..... 11.75-12.75
- Gasoline, 92 oct reg ..... 10.5-11.5
- Kerosine ..... 10.375
- Heating oil, No. 2 ..... 9.875
- Gas oil, 48-52 d.i. ..... 10.125
- Fuel oil, bunker "C" ..... $2.00-2.10

**Caribbean, cargoes**
- Avgas, Grade 100/130 ..... 16
- Gasoline, 93 oct research prem ..... 10.75
- Gasoline, 87 oct research reg ..... 9.875
- Gasoline, 79 oct research ..... 9.125
- Gasoline, 70-72 oct motor method ..... 9
- Kerosine ..... 10.625
- Heating oil, No. 2 ..... 9.875
- Gas oil, 48-52, d.i. ..... 10.125
- Fuel oil, bunker "C" ..... $2.00

**New York Harbor, barges**
- Kerosine ..... 11.5
- Heating oil, No. 2 ..... 11
- Fuel oil, No. 6 ..... $2.37-2.45

**Okla-Group 3, northern shpt., bulk**
- Gasoline, 89 oct reg ..... 12-12.5
- Kerosine ..... 10.75-11.125
- **Heating oil, No. 2 ..... 9.5↓-10**
- Fuel oil, No. 6 ..... $1.90-2.00

**Chicago, bulk**
- **Gasoline, 91 oct reg ..... 12↑**
- **Heating oil, No. 2 ..... 10.25↓-11.85**
- Fuel oil, No. 6 high sulfur ..... 7.65-7.75

**Los Angeles, rack**
- **Gasoline, 88 oct reg ..... 12.65↑**
- Diesel fuel, PS 200 ..... 8.5-11.25
- Light fuel, PS 300 ..... $2.80
- Heavy fuel, PS 400 ..... $2.15-2.35

**Natural Gasoline, Grade 26-70**
- FOB Group 3 ..... 4.5
- FOB Breckenridge, Tex. ..... 4

**LP-Gas**
- Propane, Oklahoma (Group 3) ..... 5.5

**Pennsylvania Lubes**
- Bright stock, 25 p.t. ..... 22
- 200 vis. neutral, 25 p.t. ..... 21

**Mid-Continent Lubes, Tulsa basis**
- Bright stock, solvent 95 v.i. ..... 23-24
- Neutral, solvent, 200-210 vis. ..... 19.5-20.5

**Gulf Coast Lubes**
- Bright stock, solvent, 95 v.i. ..... 24
- Neutral, solvent, 200 vis. ..... 20.5

### Eastern Hemisphere

**Singapore (Pulau Bukom), cargoes**
- Avgas, grade 100/130 ..... 17.25
- Gasoline, 79 oct research ..... 9.75
- Kerosine ..... 10.75
- Gas oil, 48 d.i. minimum ..... 10.5

## KEY PRICES—CRUDE OIL

(2¢ differential per deg. of grav. applies except as noted)

### Western Hemisphere

**United States (at the well)**
- Mid-Continent, 36.0-36.9 ..... $2.77-2.97
- North Dakota, 36.0-36.9 ..... 2.62-2.87
- Texas:
  - Gulf Coast, low cold test, 26.0-26.9 ..... 3.50
  - Gulf Coast, Upper & Lower, 26.0-26.9 ..... 2.92-3.22
  - West Texas, sweet, 36.0-36.9 ..... 3.00
  - West Texas, N. M., inter., 36.0-36.9 ..... 2.93
  - West Texas, N. M., sour, 32.0-32.9 ..... 2.71
  - East Texas, flat ..... 3.25
  - Mirando, 28.0-28.9 ..... 3.31
- Illinois Basin, flat ..... 3.00
- Pennsylvania Grade, Bradford dist., flat ..... 4.05
- California, Signal Hill, 21.0-21.9 ..... 2.40-2.50†
- North Louisiana-Arkansas, 36.0-36.9 ..... 2.77-3.02
- Wyoming, sweet, 36.0-36.9 ..... 2.85-2.90
- Wyoming, sour, 32.0-32.9 ..... 2.63-2.71

**Canada (flat prices, at the well)**
- Acheson-Stony Plain (Alta.) ..... $2.61
- Leduc-Woodbend (Alta.) ..... 2.67
- Redwater (Alta.) ..... 2.56
- Daly (Man.) ..... 2.38
- Smiley (Sask.) ..... 2.33

**Venezuela (Cargoes, FOB lifting port designated)**
- Cumarebo, 48.0-48.9, Tucupido ..... $3.51
- San Joaquin, 41.0-41.9, Puerto la Cruz ..... 3.25
- Oficina, 35.0-35.9, Puerto la Cruz ..... 2.88-2.90
- Tia Juana, Medium, 26.0-26.9, Amuay ..... 2.40
- Bachaquero, flat, Las Piedras ..... 1.78-1.93
- Tarra, 38.0-38.9, San Lorenzo ..... 2.93
- Lagunillas Heavy, flat, Cardon ..... 2.10

†*Differential per deg. of grav. varies.*

### Eastern Hemisphere

**Middle East, Persian Gulf (Cargoes, FOB lifting port)**
- Arabia, 34.0-34.9, Ras Tanura ..... $1.89-1.90
- Safaniya, 27.0-27.9, Ras Tanura ..... 1.50
- Iran, 34.0-34.9, Bandar Mashur ..... 1.86-2.04
- Iran, 34.0-34.9, Abadan ..... 1.81
- Iraq, 35.0-35.9, Fao ..... 1.80
- Kuwait, 31.0-31.9, Mina-al-Ahmadi ..... 1.67
- Qatar, 41.0-41.9, Umm Said ..... 2.05
- Neutral Zone, Burghan, 23.5-24.4, Mina Saud ..... 1.51
- N. Zone, Eocene-Ratawi, 20.5-21.4, Mina Saud ..... 1.38

**Middle East, Eastern Mediterranean**
- Arabian, 35.0-35.9, Sidon ..... $2.29
- Iraqi, 36.0-36.9, Tripoli, Banias ..... 2.31

**Far East, Cargoes, FOB Lutong, Sarawak**
- Seria Light, flat ..... $2.57

## KEY TANKER RATES

(Last paid, per long ton, single voyage)

**U.S. Gulf-New York, clean (USMC—22½%) $2.21↑**
**U.S. Gulf-New York, dirty (USMC—30%) $2.00↑**
**NWI-USNH, dirty (USMC—45% $1.51↑**
**NWI-UK/Cont., dirty (Scale—55%) 14/8*↓**
**Persian Gulf-UK/Cont., dirty (Scale—65%) 23/3*↓**
**Persian Gulf-USNH, dirty (USMC—72½%) $3.49↓**

**Sterling.*

# 'Sell Esso' Drive in High Gear

**Esso Standard Oil Co. has mobilized its entire New York headquarters in a promotional drive aimed at the company's most important marketing area.**

In the New York metropolitan area, where Esso sells about 25% of all its petroleum products, all 4,500 New York employees of Esso—plus the New York area employees of Standard Oil Co. (N. J.), Esso Export Corp., and five other Jersey Standard affiliates—have been enlisted in a campaign for increased sales.

M. J. Rathbone, Jersey's president, and William Naden, Esso's president, say that the drive is concentrated on New York partly because Esso's market position in the New York area is only about half as good as its average position in the rest of its 18-state marketing territory.

**Esso announced this week that the drive has already generated over 15,000 nominations for credit cards, and over 500 "hot tips" for oil heat and other Esso products.**

In dramatizing the potential of this program, Esso multiplies 4,500 (the total number of Esso employees involved) by the gasoline requirements for one family. Thus, if each employee contributes only one successful account, Esso says its volume could climb by nearly 3-million gal. a year.

Throughout the Esso organization, the "Sell Esso" program is reportedly "very well received" by employees. In some cases, employees have submitted over 30 credit card nominations each.

**Here's the way Esso's promotional scheme works: Employees are encouraged to submit "hot tips" on prospective customers. In return, the employees receive a cash award for each completed application, plus competitive points toward every-four-months and annual prizes.**

The awards range from $2 for a successful credit-card application and $10 for an Esso burner installation to $25 for a reseller account. The employee with the most points accumulated for a four-month period receives a $10 saving bond. The winner of the annual prize receives a four-day trip to Bermuda for two—complete with a baby-sitter, if needed.

**A spot survey of 13 major companies reveals that other companies also promote sales through employees. But none of the 13 offer cash inducements to employees to arouse effort.**

Those companies that have tried employee programs generally rely on "loyalty to the company" or the "competitive spirit" as the motivating force behind their drives. Pure Oil Co., Sinclair Refining Co., and Union Oil Co., for example, have not offered any cash awards to employees in their programs to generate more credit card and fuel oil accounts.

Some companies, such as Tidewater Oil Co. and Richfield Oil Corp. (L. A.), make it easy for employees to get credit acceptance for their friends. But neither is now making any extraordinary effort to stimulate credit-card promotion through employees.

**In general, opinion is divided on this practice of converting employees into a sales promotion resource.** "It's terrific," says the eastern credit manager of a major oil company. Commenting on the Esso program, he says that, by offering prizes Esso is capitalizing on competitive enthusiasm.

On the other hand, a Pure Oil credit manager disapproves of the emphasis that is given to employee programs. "Applications," he says, "rather than actual potential customers, are too often sought. This sort of thing is expensive. And you're just spinning your wheels when you turn up a lot of names that don't result in any new business."

# Dealer Views His Station on TV

**Peering down at this service station in Dallas is a television camera. Like a silent foreman, it watches—then reports to the "boss," who is sitting comfortably in a nearby apartment watching his television screen.**

Since its installation, this closed-circuit television system has already "discovered" two helpers who weren't carrying their share of the work. They were fired.

The TV system improves station efficiency in another way, too: Owner Chape Chapin can sit at home and call his helpers from the lube bay when a motorist pulls in unnoticed.

Moreover, Chapin told Petroleum Week, "The TV just generally improves service. It's good psychology to have the boss watching things all the time."

**The system cost $1,550 installed. But the owner figures that the set is already saving him almost $300 a month in labor costs. The TV takes the place of another employee.**

Humble Oil & Refining Co. plans to send over some of its marketing officials to inspect this new "gimmick." Apparently the company doesn't consider the set too practical for most of its dealers. "Not all of them live close enough to their stations to use a TV system," says W. D. Snodgrass, Humble's sales manager in Dallas.

Chapin, however, expects to expand his TV viewing. He plans to build at another location, so he'll have two stations to watch on his TV.

# What's New / IN MARKETING

**The right of a supplier to sell gasoline to commercial accounts at prices lower than it charges dealers was upheld last week by a U.S. district judge.** Judge Francis Ford dismissed a dealer's suit against Esso Standard Oil Co. that had accused the supplier with violating the Clayton Act.

"It is clear," said the judge, "that the only price differential alleged here has not actually affected competition, and so it could not have any effect on potential competition between plaintiff and defendant."

•

**Jobbers will save $300 on every million gallons of gasoline they purchase if federal taxes are collected at the jobber level instead of from refiners,** says Rep. William S. Broomfield.

"Inasmuch as the jobbers purchase gasoline with the federal tax included in the price, there is no way to recover the tax represented by gasoline that has evaporated or been spilled," he says. His bill would allow the jobber to purchase his product from the refiner tax-free, paying a tax to the government on the basis of his completed gasoline sales.

•

**Sinclair Refining Co. is following the trend toward "space-age" promotion.** Its new 100-plus-octane gasoline, says the company, will push autos to "top performance" in "all three stages" of propulsion—starting, acceleration, and mileage.

•

**Carter Oil Co. is briskly expanding in the West. Last year the company tore the wraps from 132 new stations, built mostly in Washington and Oregon.** In Seattle, Wash., Carter plans to have more than 100 stations by 1965.

The results of the expansion are already indicated in rising product sales, Carter says. Last year the company sold 13% more petroleum products than in 1957.

•

**American Motors will eliminate more than half of the total grease fittings on 1960 Ramblers.** The small car will substitute "sealed-for-life" nylon bushings for eight lube fittings in the steering linkage of the V-8 models. A company spokesman says complete elimination of the fittings isn't yet in sight.

•

**Drag chains on oil trucks are ineffective; there's no sound reason to continue their use,** says API, in a recent statement on local ordinances applying to oil marketing.

•

**Shell Oil Co. was the largest outdoor advertiser in the oil industry last year, and Socony Mobil Oil Co. was tops in magazine and network TV advertising.** On outdoor ads, Shell spent over $3.2-million. Mobil concentrated over $3-million on magazines and television.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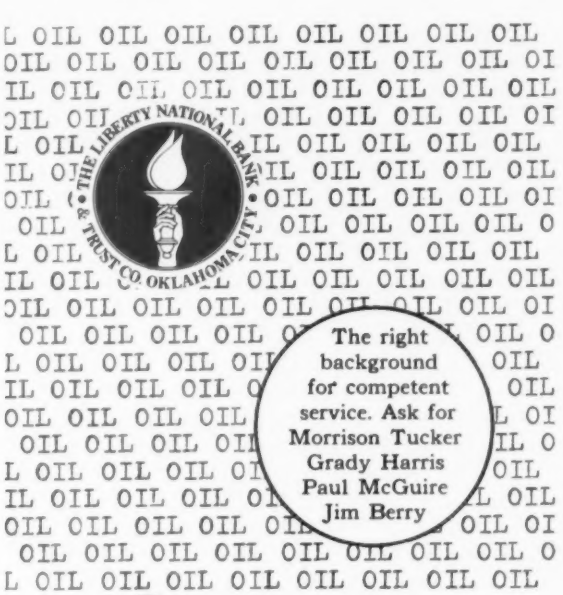
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# DEPT/Service & Equipment Companies

**H. U. GARRETT** has acquired the assets of McFarland Mfg. Corp., Houston, manufacturer of products for the oil industry. The corporate name has been changed to McFarland Mfg. Co., and Garrett is president. **Clarke A. Polk** continues as vice-president, and **Lyal W. Hetrick** as secretary-treasurer. Garrett founded Garrett Oil Tools in 1946, and served as its president until 1958, when he was elected vice-president of U.S. Industries, Inc. He resigned from U.S. Industries at the beginning of this year.

H. U. Garrett

J. E. Taylor

**DR. J. EARL TAYLOR** is the new manager of research and development for Girdler Catalysts, Louisville, Ky., a unit of Chemetron Corp.'s chemical products division. He has been market development manager for Girdler Catalysts since 1954, and will incorporate that function into his new position. He succeeds **Dr. John N. Pattison,** who will take charge of a new, diversified long-range research program.

**JIM VON GONTEN** is president and general manager of Parnell Well Logging, Inc., newly formed company in Shreveport, La. Von Gonten has been doing contract logging for the past six years.

**NEWTON E. ARMSTRONG** has been named manager of the systems development division of Southwestern Industrial Electronics Co., Houston, one of the Dresser Industries. Before joining SIE in 1957, Armstrong was associated with International Business Machines Corp., in Endicott, N.Y.

S. M. Harris, Jr.

P. M. Spears

**SAMUEL M. HARRIS, JR.,** is the new salesman at Sterling, Colo., and **PHILLIP M. SPEAIRS** at Hobbs, N.M., for Jones & Laughlin Supply Division. Both men are recent graduates of Jones & Laughlin's sales training program.

**J. C. RUSH,** formerly assistant district manager of the Lafayette (La.) district of Hycalog, Inc., has been promoted to district manager in charge of diamond bit sales at Shreveport. **J. E. Woods** has been transferred to Calgary, where he will be manager of Hycalog, Ltd., Canadian diamond bit and core barrel subsidiary. Woods was formerly assistant division manager at Shreveport. **J. A. Acker,** formerly assistant district manager of Hycalog's well logging office in Casper, Wyo., has been promoted to manager there. **H. G. Allen,** formerly district manager for diamond bit sales at Midland, Tex., moves to Corpus Christi in the same capacity. **H. K. Ware** will be district manager in Casper; he has been district manager for diamond bit sales at Shreveport. **J. M. Tooke,** who was district manager for well-logging at Casper, moves to Jackson, Miss., as district manager.

**FRED L. MAGOON** has joined Garrett Oil Tools, a division of U.S. Industries, Inc., as administrative engineer in charge of research projects, at Longview, Tex. He was formerly associated with Fibercast Co., a division of Youngstown Sheet & Tube Co., in Tulsa.

F. L. Magoon

G. B. Coale

**GEORGE B. COALE,** general manager of the Baroid Division, National Lead Co., has been elected a director of National Lead. He is also a National Lead vice-president. Coale, with the company since 1935, became assistant general manager of the Baroid Division in 1949, and was promoted to his present position in that division in 1954.

**J. F. BAIER** became vice-president in charge of engineering for the metals division of Arthur G. McKee & Co., Cleveland, on Mar. 15. Vice-president **A. L. Foell** was formerly in charge of both engineering and consulting in the metals division. Foell is now working on new developments and processes within the metals industry, and continues to direct the company's consulting services. Baier, with McKee since 1930, was most recently chief engineer in the metals division.

**B. F. WINBORN, JR.,** is president of Exploration Service Co., new well logging and core analysis service company in Houston. Other officers of the new company are: **O. M. Wilkinson,** vice-president and sales manager; **Stanley Wondrash,** vice-president and instrument manufacturing manager; and **J. W. O'Neal,** secretary-treasurer and general manager. The four officers were formerly associated with United Core, Inc., in which Winborn was co-owner.

**RALPH HUGHES** is the new manager of manufacturing for the Dallas (Tex.) and Whittier (Calif.) manufacturing operations of Security Engineering Division, one of the Dresser Industries. He moves to Dallas from Whittier, where he has been operations manager for the past 13 years.

R. Hughes

H. Northcutt

**HUBERT NORTHCUTT** has been named division manager at Wichita, Kan., for Halliburton Oil Well Cementing Co. He succeeds **Elmer Lacy,** who is retiring. Northcutt was formerly division manager at Abilene, Tex.


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# DEPT/Personals

L. E. Frensley

E. J. Wacker, Jr.

**L. E. FRENSLEY** and **E. J. WACKER, JR.** have been elected vice-presidents of Magnolia Petroluem Co., Dallas. In addition to his new responsibilities as vice-president, Frensley will continue as company comptroller. Wacker was formerly assistant vice-president; in addition to his new responsibilities in the executive department, he will be concerned with employee and public relations, and the operations of the economics and medical departments. At the same time, **R. D. Hanley**, vice-president and manager of the company's natural gas department, was named head of Magnolia's newly created petroleum chemicals department.

**CHARLES E. LEHECKA** is the new chief geologist in Sun Oil Co.'s Latin American division, in Caracas, Venezuela. He has been regional geologist for the Latin American division since 1958.

**ALBERT F. LAGER** will become special representative for Ohio Oil Co. in all foreign companies in which the company has an interest, beginning June 1. **R. E. McMillen** succeeds Lager as resident manager of Oasis Oil Co. of Libya, an Ohio Oil subsidiary. McMillen is presently manager of Ohio Oil's Sidney (Neb.) production district. **Fredrick C. Aldrich,** supervisor of engineering and contracts in the natural gas division in the general offices in Findlay, Ohio, succeeds McMillen at Sidney.

A. F. Lager

H. H. Peter

**DR. HUGO H. PETER** is the new European technical representative for Standard Oil Co. (Ind.) and its affiliate, Amoco Chemicals Corp., with headquarters in Paris. Peter has been European representative at the Hague for the Armour Foundation, Chicago. Before that, he was on the research staff of Indiana Standard at its Whiting (Ind.) laboratories.

**M. W. HAAS,** vice-president and a director of Carter Oil Co., will leave the company for six months, effective Apr. 1, to serve as assistant coordinator of the producing coordination department of Standard Oil Co. (N.J.), Carter's parent company. Haas will replace **N. Y. Ruth,** who has been temporarily transferred to London.

**H. R. BRANKSTONE,** division employee relations supervisor of the Ft. Worth production division of Gulf Oil Corp., is on loan to Iranian Oil Exploration & Producing Co., with headquarters at Masjid-i-Sulaiman, Iran. He will be head of the Iranian company's employee relations department. Iranian Oil Exploration is an operating company of Iranian Participants, Ltd., of which Gulf is a member.

**HOWARD W. DAVENPORT,** vice-president and director of Woodley Petroleum Co., Houston, has been elected a director of Pan American Sulphur Co., Houston.

G. E. Hillhouse

E. L. Smith

**GORDON E. HILLHOUSE** has been appointed to the newly created position of administrative assistant to **R. E. Foss,** senior vice-president of Sunray Mid-Continent Oil Co.'s production department, in Tulsa. Hillhouse was formerly Sunray's district engineer at Corpus Christi. **EVERETT L. SMITH,** coordinator of training for the employee relations department, is on loan to the production department on a temporary basis, to fill the new position of training supervisor. Smith will set up the program and supervise training during its initial stages. **L. G. Rodgers** has been named manager of engineering for production. He previously headed the department's gas division. **R. W. Griffith,** formerly manager of unitization operations, has been named manager of unitization and gas sales. **John Finch** is office manager at the department's general office in Tulsa, and **Alvin Summers** is personnel supervisor there.

**F. O. GRIFFIN** has been appointed assistant to **W. C. Norman,** president of Colorado Oil & Gas Corp., Denver. Griffin resigned as vice-president and treasurer of Western Nuclear Corp., Rawlins, Wyo., to accept the position with Colorado.

**DONALD G. STEVENS** has been appointed manager of the petrochemical department of Standard Oil Co.

(Ohio), at Lima, Ohio. Stevens, with the company since 1941, was formerly manager of the manufacturing division in the petrochemical department, at Lima.

**M. B. TAUBMAN** has been elected vice-president of Buffalo Petroleum Co. He will supervise the company's activities in the West Texas-New Mexico division from offices in Midland.

M. B. Taubman

C. W. Lutz

**C. W. LUTZ** is the new director of Gulf Oil Corp.'s planning and economics department, in Pittsburgh. He succeeds **P. H. Bohart,** who recently became administrative vice-president and coordinator of Gulf's crude oil department. Lutz joined Gulf in 1950 in the production department at Houston, and became economics advisor to the vice-president of the Houston production division shortly after. In 1951 he transferred to Pittsburgh as director of purchases, and in 1953 he was transferred back to the production department as administrative coordinator. Lutz was assigned to the executive staff in 1955, and a year later joined the newly formed planning and economics department as coordinator.

**JOHN W. DENHOLLEM** has been appointed to the newly created position of superintendent of drilling and production in Arkansas Louisiana Gas Co.'s production and exploration division, in Shreveport, La. He was formerly production superintendent and chief production engineer. **Wyatt H. Thomas** has been named chief production engineer, and **Frank P. Yarbrough** production coordinator.

**ROBERT M. HENDERSON** has been named director of the market research division of Petroleum Chemicals, Inc., New Orleans. He was formerly a senior market analyst for American Cyanamid Co., in New York. In his new capacity, Henderson will be responsible for studies of actual and potential markets for chemical products and will also direct the development program for new products.

**WILLIAM M. WINTERTON** has been appointed western counsel for British American Oil Co., Ltd., with headquarters in Calgary. He has been a member of BA's law department for the past three years. He succeeds **W. R. Sinclair,** who will become a partner of the Edmonton legal firm of Lindsay, Emery, Jamieson, Chipman, Sinclair & Lambert.

**ROBERT O. ANDERSON,** president of Malco Refineries, Inc., Roswell, N.M., and **BENJAMIN S. PARKS,** a Los Angeles attorney, are new directors of National Propane Corp.

**CHESTER L. MAY** is a new director of Rio Grande Valley Gas Co., Brownsville, Tex. May is a former senior vice-president and director of Lone Star Gas Co.; he retired from that company last year.

**JACK MENNEER,** formerly chief engineer for Anglo-American Exploration Co. in Canada, has joined Stekoll Petroleum Co. as manager of its exploration department in Calgary. He succeeds **John Bonds,** a Stekoll partner, who moves to Los Angeles as investment manager of Stekoll operations.

D. O. Swan

R. H. Milbrath

G. D. Comnas

**ROBERT H. MILBRATH** has been elected executive vice-president, **D. O. SWAN** a vice-president, and **G. D. COMNAS,** who is a vice-president, a director, of Esso Export Corp., New York. Milbrath replaces **George H. Freyermuth,** 52, who is resigning from Esso Export and plans to end his 31-year active association with the Jersey Standard organization. Freyermuth says he has no immediate plans. Milbrath has been with the Jersey organization for 25 years, and has been a vice-president and director of Esso Export since 1957. Swan comes to Esso Export from Esso Standard Oil Co., where he was manager of the petroleum specialties department. He succeeds Comnas as vice-president and manager of Esso Export's cargo sales. Comnas, with Esso Export since 1949, has been a vice-president since 1956.


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# A New Look at Drilling Budgets

NUMEROUS COMPANIES are reviewing their drilling budgets for 1959 and future years as a result of the new mandatory controls on oil imports into the U. S.

The net result will be that many companies will shift some of their emphasis on drilling from foreign—as originally planned—to the U. S. Most likely, total drilling in 1959 will run somewhat higher than had been anticipated.

One large independent, which had earmarked $50-million for further development of its South American holdings, now is considering switching some of that budget to increased drilling in the U. S. This also holds true for one of the larger majors—with a long history of foreign operations.

Over-all, it means that both exploratory and development drilling in the U. S. may return to near-peak levels.

# What Good Will Spite Really Do?

SOME MARKETING GROUPS have said that the reductions in imports under the new controls leave them but one course—and that is to fight for a cut in, or elimination of, percentage depletion.

Their belief is that such action would help them to "get even" with those who advocated mandatory controls. But such spiteful thinking reflects the same kind of intra-industry bickering that led to mandatory controls in the first place.

A reduction in percentage depletion would reduce the incentive to drill. In the long run it would lead to a drying up of oil reserves, which would have just as disastrous an impact on marketers as it would on the rest of the petroleum industry.

We hope clearer thinking prevails among the majority of marketers who are interested in their own—and the industry's—survival.

# 'Business as Usual' on Imports

BEFORE THE INK WAS DRY on the mandatory import control regulations, some changes—or at least changes in interpretation—have become necessary. They were not entirely unexpected.

Some refiners reportedly have made "exchange agreements," trading their import allocations for domestic crude at cash considerations ranging from 60¢ to $1 a bbl. Interior Secretary Fred Seaton ruled last week that deals involving cash are banned. But he said that refiners who don't want to—or can't economically—run foreign crude can make swaps on an oil-for-oil basis. The trading doesn't have to be barrel-for-barrel.

Only the most naive will believe that such a ruling will stop "trafficking" in import allocations.

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